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# TRANSACTIONS

OF THE

# Luzerne County Medical Society

For the Year Ending March, 1887

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ORGANIZED MARCH, 1861

Wilkes-Barre
Printed for the Society
1887

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OF THE

# Luzerne County Medical Society

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Press of
The Wilkes-Barre Record
Wilkes-Barre, Pa.

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## RESOLUTIONS.

The following resolution was adopted November 3d, 1886, at a stated meeting of the Society:

*Resolved*, That a volume of transactions for 1886, to include an abstract of the minutes, essays and cases of note read and reported, a full list of members, together with the revised Constitution and By-Laws of the Society, be published at the end of the year—said volume to be paid for by the Society.

## OFFICERS AND COMMITTEES FOR 1886.

*President,*

| | |
|---|---|
| DR. S. W. TRIMMER, . . . . . | White Haven. |

*Vice Presidents,*

| | |
|---|---|
| DR. D. H. LOCKARD, . . . . . | Plymouth. |
| DR. J. T. HOWELL, . . . . . | Wilkes-Barre. |

*Secretary and Treasurer,*

| | |
|---|---|
| DR. G. W. GUTHRIE, . . . . . | Wilkes-Barre. |

*Censors.*

| | |
|---|---|
| DR. G. UNDERWOOD, 3 years, . . . . . | Pittston. |
| DR. I. E. ROSS, 2 years, . . . . . | Wilkes-Barre. |
| DR. J. B. CRAWFORD, 1 year, . . . . . | Wilkes-Barre. |

*Executive Committee.*

| | |
|---|---|
| DR. C. P. KNAPP, . . . . . | Wyoming. |
| DR. C. A. SPENCER, . . . . . | Dallas. |
| DR. J. L. MINER, . . . . . | Wilkes-Barre. |
| DR. L. H. TAYLOR, . . . . . | Wilkes-Barre. |
| DR. W. G. WEAVER, . . . . . | Wilkes-Barre. |

*Delegates to the American Medical Association,*

DR. C. P. KNAPP, DR. W. G. WEAVER, DR. L. H. TAYLOR.

*Delegates to Pennsylvania State Medical Society,*

DR. E. C. HILL, DR. W. G. WEAVER, DR. G. W. GUTHRIE,
DR. J. L. MINER, DR. M. B. HUGHES. DR. J. T. HOWELL,
DR. J. BROOKS, DR. D. H. LOCKARD, DR. W. R. LONGSHORE.

## ORGANIZATION OF THE LUZERNE COUNTY MEDICAL SOCIETY.

Pursuant to a regular call for a Medical Convention to be held at Wilkes-Barre, Luzerne County, Pennsylvania, the following named medical gentlemen residing in, and practicing in said county, assembled at the Court House, Wilkes-Barre, on the Fourth day of March, A. D. 1861:

| | |
|---|---|
| P. C. H. Rooney, | Hazleton. |
| H. P. Moody, | Lehman. |
| H. Ladd, | Scranton. |
| C. Marr, | " |
| Wm. Green, | " |
| B. H. Throop, | " |
| G. Urquhart, | Wilkes-Barre. |
| W. F. Dennis, | " |
| E. R. Mayer, | " |
| C. Wagner, | " |
| E. B. Miner, | " |
| R. H. Tubbs, | Kingston. |
| S. Lawton, | Pittston. |
| A. L. Cressler, | Conyngham. |
| J. R. Casselberry, | " |

The meeting having been called to order, Dr. B. H. Throop was, on motion, unanimously chosen to preside during the organization of a Medical Society in this County, for which object, as stated, the meeting was called.

When upon motion Drs. Dennis, Ladd and Cressler were appointed a committee to select and report permanent officers of this Association for one year. Drs. Green, Lawton, Mayer, Urquhart and Rooney were appointed a committee to prepare and report a Constitution and By-Laws for the government of this Society.

Meeting adjourned for one hour, and having again assembled, the Committee on Permanent Officers, presented the following report for the consideration of the Convention:

| | |
|---|---|
| President, B. H. Throop, . . . . . | Scranton. |
| First Vice President, E. R. Mayer, . . . | Wilkes-Barre. |
| Second Vice President, A. L. Cressler, . . | Conyngham. |
| Secretary, G. Urquhart, . . . . . | Wilkes-Barre. |
| Corresponding Secretary, Wm. Green, . . | Scranton. |
| Treasurer, R. H. Tubbs, . . . . . | Kingston. |

Whereupon on motion the report was unanimously adopted.

The Committee appointed to prepare the Constitution and By-Laws, upon leave reported, with the approbation of the Society, that the Constitution and By-Laws of the Philadelphia County Medical Society be, for the present, adopted.

When, upon motion, the report was adopted with the request that the committee be continued to report at the next meeting of this Society any changes they may deem proper after more carefully revising the Constitution and By-Laws aforesaid.

Drs. Cressler, Dennis, Lawton and Marr were appointed a committee to prepare and report a Fee Bill.

On motion it was resolved, that each member send to the Secretary the names of respectable practitioners in his neighborhood.

On motion Drs. E. B. Miner, Rooney and Urquhart were appointed a Committee on Credentials.

The Convention then adjourned to convene again on the Third Wednesday in April, at one o'clock P. M. in Wilkes-Barre.

# CONSTITUTION.

## ARTICLE I.—Title of the Society.

This Society shall be called the Luzerne County Medical Society.

## ART. II.—Objects of the Society.

The objects of this society shall be the organization of the medical profession of the county of Luzerne, in connection with the State Medical Society and the American Medical Association; the promotion of knowledge upon subjects connected with the healing art; the advancement of the character and the protection of interests of those engaged in the practice of medicine; and the employment of the means calculated to render the profession most useful to the public and subservient to the great interests of humanity.

## ART. III.—Members of the Society.

Sec. 1. To entitle a person to membership in this society, he must be a citizen of the county of Luzerne, a practitioner of one year's standing in said county, a graduate of at least one year's standing of a respectable medical school, a licentiate of three years' standing in some medical institution or board recognized by the State Society, or a regular practitioner of at least fifteen years' standing, and of good moral and professional reputation.

Sec. 2. Any physician who gives his support to a system or mode of practice which is sustained by efforts to lessen public confidence in the science of medicine, or in the medical profession; or who by advertisement announces his claim to superior qualifications in the treatment of disease, or of a particular disease; or who knowingly permits public notice to be given of such claim, or who shall procure a patent for a remedy or instrument of surgery, or who

deals in patent medicines; or who shall enter into a collusive agreement with an apothecary to receive pecuniary compensation or patronage for sending his prescriptions to said apothecary; or who shall send to an apothecary prescriptions not readily understood by any other educated apothecary; or who prescribes a remedy without knowing its composition; or who shall hereafter give a certificate in favor of a patent remedy, shall be disqualified from becoming or remaining a member of this society.

## ART. IV.—Election of Members.

Sec. 1. Every candidate for membership shall be proposed in writing, at a stated or other meeting, by two members who have personal knowledge of his qualifications.

Sec. 2. All propositions for membership shall be referred to the censors, who shall inquire into the character and standing of the persons proposed, and report as to their eligibility for membership at the next stated meeting. When the election for members takes place, if three-fourths of the ballots deposited shall be in favor of the candidates, they shall be declared elected.

Sec. 3. No candidate for membership who is rejected, shall be again proposed within twelve months thereafter.

Sec. 4. Candidates for membership shall be balloted for in the following manner: The presiding officer shall appoint two tellers, who shall affix the name of each candidate on the cover of a separate receptacle for ballots, and shall place the said receptacle in a position not open to the observation of any other than the member at the time of voting. The members shall then deposit their ballots separately at the call of the presiding officer, no member present being excused from voting excepting by the consent of the society. When all the members present have voted, the tellers shall proceed to count the votes deposited, and they shall announce the result by simply stating the number of votes that have been given in favor of each candidate.

Sec. 5. A member-elect before being admitted to the privileges of membership, shall subscribe to the Constitu-

tion and By-Laws of this society (a copy of which shall be furnished him with the notice of his election), pay an admission fee of five dollars, be presented at one of the meetings, and make the requisite declaration. But if he shall neglect or refuse to comply with these conditions for the space of twelve months, his election shall become void, unless the society decide otherwise by a unanimous vote, in consequence of the personal presentation of a sufficient excuse by such member-elect.

### ART. V.—Certificate of Membership.

Every member shall receive a certificate of membership signed by the officers of the society, in the following words:

This is to certify, that ——— was duly admitted to membership in the Luzerne County Medical Society, on the — day of ——, A. D. 18—.

—— ——, *President.*

Attest: —— ——, *Vice President.*

—— ——, *Recording Secretary.*

### ART. VI.—Censure and Expulsion of Members.

If an accusation of violating the laws or regulations of this society shall be made against any member, and presented to the censors in writing, it shall become their duty to notify the accused member of the same, and if, after proper investigation they consider the charge to be sustained, they shall report the case with their decision to the society, at its next stated meeting, notifying the accused member of the time when said report is to be made. If the accused member shall fail to exculpate himself or appear in answer to the charge, he may be reprimanded, suspended or expelled, by a vote of three-fourths of the members present.

But no vote for the reprimand, suspension or expulsion of a member shall be taken, excepting at a stated meeting, at which not less than twelve members are present, and of which meeting and report due notice has been given.

## ART. VII.—Officers of the Society.

Sec. 1. The officers of the society shall be a

President,
Two Vice-Presidents,
Recording Secretary,
Corresponding Secretary,
Treasurer,
Three Censors; who shall be elected by ballot, at the annual meeting in January, and shall serve until their successors are elected.

At the stated meeting in January three Censors shall be elected, one to serve for one year, one for two years, and one for three years; and annually thereafter one censor shall be elected to serve for three years. All other officers shall be elected annually, and a majority of the votes cast for each officer or delegate shall be required for his election.

Sec. 2. The President shall not be eligible for two consecutive terms.

Sec. 3. Previous to the election of officers and delegates at the meeting in January, nominations of candidates may be made by individual members, but members who have not been thus nominated may be balloted for.

Sec. 4. An Executive Committee of five shall be elected by ballot, at the annual meeting in January, who shall serve for one year, and whose duty shall be to present nominations for officers at the annual meeting, to be voted for by the society; present a subject and essayist at each monthly meeting, and two members to open the discussion—these appointments to be two months in advance—and further advance the interest of the Society.

## ART. VIII.—Duties of Officers.

Sec. 1. The President shall preside at the meetings of the society, and preserve order in the same. He shall decide upon all questions of order or business, subject to an appeal to members present.

Sec. 2. The Vice Presidents shall, when called upon, as-

sist the President in the performance of his duties, and during his absence, or at his request, shall officiate in his place.

SEC. 3. The Recording Secretary shall keep correct minutes of each meeting of the society, which, when approved by the society, he shall transcribe in a book to be kept for that purpose. He shall receive from members their initiation fee and pay the same over to the Treasurer forthwith. He shall notify all members of stated and special meetings to be held, and shall transmit annually to the State Society, a copy of such proceedings as may be required by that society. He shall have charge of all papers belonging to the society, other than those appertaining to the Corresponding Secretary and Treasurer. When called upon to do so by the society, he shall prepare articles for publication, and shall deliver to his successor in office all books, papers and records in his possession, which belong to the society.

SEC. 4. The Corresponding Secretary shall conduct the correspondence of the society.

SEC. 5. The Treasurer shall receive all moneys belonging to the society, and disburse the same as directed by a warrant signed by the presiding officer and Secretary. He shall keep a correct account of all moneys due to and belonging to the society, and record all disbursements in a book provided for the purpose. He shall submit his accounts to an auditing committee appointed by the society at the annual meeting in September, and a record of his account shall be made in the minutes of the society.

SEC. 6. The censors shall inquire into the character and standing of all candidates for membership, and report as to their eligibility at the next stated meeting. They shall investigate any disagreement upon professional matters which may occur between members, and endeavor to restore harmony if possible. When a member is charged with a violation of the laws of the society, it shall be the duty of the Censors fully and impartially to investigate the same, and if they consider the charge to be well founded, to report the case to the society at its next stated meeting, together with their decision.

## ART. IX.—Meetings of the Society.

Sec. 1. The stated meetings of the society shall be held on the first Wednesday of every month.

Sec. 2. For the transaction of the ordinary business of the society, six members shall be a quorum. For the election of officers, members and delegates, for altering the constitution, for the reprimanding, suspension or expulsion of a member, twelve members shall be a quorum.

Sec. 3. Special meetings of the society may be called by the President, whenever requested in writing by six members of the society, or may be appointed to be held at any time by a vote of the society.

## ART. X.—Funds of the Society.

Sec. 1. An annual contribution of five dollars shall be due and payable by each member at the stated meeting in January.

Sec. 2. Every member neglecting to pay, or refusing for six months to pay the amount of his contribution, shall be charged ten per cent. additional, and if in arrears at the close of the year, (application for the amount having been made by the Treasurer,) he shall be reported by that officer to the society as a delinquent, and in case payment be not made within six months thereafter, he shall forfeit his right of membership.

## ART. XI.—Code of Ethics.

The code of ethics adopted by the State Medical Society, is a part of the regulations of this society and is binding upon all its members. Any departure from the true meaning and spirit of this code, on the part of any member of this society, shall subject the offender to the discipline of the society.

## ART. XII.—Fee Bill.

The table of fees, rates of charging as adopted and established by this society, shall be adhered to by its members, and be the criterion for regulating pecuniary consider-

ations for services rendered by them as far as is consistent with a just regard for the circumstances of patients.

### ART. XIII.

The delegates of this society to the American Medical Association, and to the State Society, shall be elected annually, at the stated meeting in January, by ballot.

### ART. XIV.—Amendments.

This Constitution shall not be amended or altered unless the proposed alteration or amendment be made in writing, at one stated meeting, and receive the assent of three-fourths of the proper quorum present at the subsequent stated meeting.

---

## BY-LAWS.

### ART. I.—Place and Time of Meetings and Order of Business.

Sec. 1. All meetings of this society shall be held in Wilkes-Barre.

The Society shall determine its hour of meeting, and the Secretary shall notify members two weeks previous of the hour and place appointed. In case of change of time in railroad, he may, with the consent of the President, or one of the Vice Presidents, make such change as is necessary to accommodate members.

Sec. 2. At the appointed hour of meeting, the President, or in his absence one of the Vice Presidents, shall call to order. In case of the absence of the President and both Vice Presidents, a chairman *pro tem.* shall be appointed.

Sec. 3. At stated meetings the business shall be conducted in the following order:

1. Recording of names.
2. Reading and approval of minutes.
3. New members and visitors introduced.

4. Stated business—including election of officers, appointment of delegates, committee to report to State Society.

5. Unfinished business.

6. Reports of officers and committees.

7. Propositions for membership.

8. Election of members.

9. New business—selection of subject for discussion at next meeting.

10. Communications, oral or written, on miscellaneous topics, and pathological specimens.

11. Essay on designated subject, and discussion.

12. Adjournment.

SEC. 4. A copy of all essays read before this society shall be deposited by the writer with the Secretary, who shall preserve such papers among the archives of the society.

## ART. II.—ELECTIONS.

SEC. 1. No person shall be allowed to vote at any election, or shall be eligible for any office, or as a delegate, who has not paid his annual contribution for the year preceding the election.

SEC. 2. In the election of delegates, the several portions of the county shall be equitably represented, as far as possible.

## LIST OF MEMBERS.

| *Name.* | *Residence.* | *Election.* |
|---|---|---|
| P. C. H. Rooney,[1] | Hazleton, | March 4, 1861. |
| H. P. Moody,[2] | Lehman, | " " |
| H. Ladd,[3] | Scranton, | " " |
| C. Marr,[1] | " | " " |
| Wm. Green,[1] | " | " " |
| B. H. Throop,[4] | " | " " |
| G. Urquhart,[5] | Wilkes-Barre, | " " |
| W. F. Dennis,[2] | " | " " |
| E. R. Mayer, | " | " " |
| C. Wagner,[4] | " | " " |
| E. B. Miner,[1] | " | " " |
| R. H. Tubbs,[6] | Kingston, | " " |
| S. Lawton,[7] | Pittston, | " " |
| A. L. Cressler,[7] | Conyngham, | " " |
| R. H. Dana,[1] | " | April 17, 1861. |
| John Smith,[2] | Wilkes-Barre, | " " |
| W. Frothingham,[1] | Scranton, | " " |
| M. G. Whitney,[8] | Kingston, | " " |
| J. E. Bulkeley,[2] | Wilkes-Barre, | " " |
| R. A. Squires,[3] | Scranton, | Jan. 8, 1862. |
| W. H. Heath,[4] | Abington, | " " |
| J. J. Rogers, | Huntsville, | Jan. 14, 1863. |
| C. R. Gorman,[6] | Pittston, | " " |
| J. R. Lewis,[2] | Trucksville, | Jan. 13, 1864. |
| J. A. Hann,[4] | Newton, | " " |
| G. Underwood, | Pittston, | May 11, 1864. |
| A. G. Rickard,[8] | Plymouth, | " " |
| C. Dorr,[1] | Pittston, | " " |
| B. A. Bouton,[4] | Providence, | Jan. 11, 1865. |
| H. Hollister,[1] | " | " " |
| A. Davis,[4] | Hyde Park, | " " |
| J. B. Crawford, | Wilkes-Barre, | " " |
| S. P. Reed,[3] | Dunmore, | " " |
| W. E. Allen,[4] | Hyde Park, | May 10, 1865. |
| F. Wagner,[4] | Scranton, | " " |
| P. Winter,[4] | Dunmore, | " " |
| E. L. Diefenderfer, | Ashley, | " " |
| J. W. Gibbs, Sr.,[4] | Hyde Park, | Sept. 13, 1865. |

| *Name.* | *Residence.* | *Election.* |
|---|---|---|
| S. VanSickle,[1] | Clarks Green, | Sep. 13, 1865. |
| G. B. Boyd,[4] | Scranton, | " " |
| G. Masser,[1] | " | Jan. 10, 1866. |
| W. W. Gibbs,[4] | Providence, | May 9, 1866. |
| J. W. Gibbs, Jr.,[8] | Wilkes-Barre, | " " |
| W. G. Nugent,[2] | Pittston, | Sept. 12, 1866. |
| J. Townley,[4] | " | " " |
| M. L. Rowland,[1] | " | " " |
| W. E. Barritt,[4] | Hungtington, | Jan. 9, 1867. |
| A. W. Burns,[1] | Scranton, | " " |
| Chas. Friskkoon,[7] | Moscow, | " " |
| J. C. Morris,[1] | Orange, | Sept. 11, 1867. |
| F. Corss, | Kingston, | " " |
| P. C. Shive, | Plains | May 13, 1868. |
| P. J. O'Malley,[2] | Pittston, | Sept. 9, 1868. |
| J. F. Everhart,[1] | Scranton, | May 13, 1869. |
| W. Haggerty,[8] | " | " " |
| C. H. Fisher,[3] | " | " " |
| —— Labar,[1] | Nanticoke, | Sept. 8, 1869. |
| N. Giddings,[7] | Pittston, | " " |
| J. McGinly,[1] | Scranton, | Jan. 12, 1870. |
| C. W. Spayd, [8] | Wilkes-Barre | " " |
| A. W. Burr,[1] | Scranton, | " " |
| J. A. Murphy, | Wilkes-Barre | May 11, 1870. |
| J. T. Rothrock,[9] | Philadelphia, | May 10, 1871. |
| J M. Lewis,[8] | Wyoming, | " " |
| Chas. Washburn,[2] | Wilkes-Barre | " " |
| H. D. Bixby,[8] | Plymouth. | " " |
| R. Davis, | Wilkes-Barre | Jan. 10, 1872. |
| H. C. James,[7] | " " | " " |
| W. L. Hartman,[4] | Pittston, | " " |
| I. E. Ross, | Wilkes-Barre | Sept. 11, 1872. |
| —— Mott,[1] | Ashley, | Jan. 8, 1873. |
| C. Burr,[3] | Carbondale, | " " |
| J. N. Rice, | Pittston, | " " |
| P. F. Gunster,[7] | Scranton, | " " |
| —— Audenroid,[1] | " | " " |
| G. J. Chamberlin,[8] | Plymouth, | " " |
| A. F. McKay,[7] | " | " " |
| A. D. Tewksbury,[7] | Ashley, | Jan. 14, 1874. |
| S W. Trimmer, | White Haven, | " " |
| O. F. Harvey, | Wilkes-Barre | May 6, 1874. |
| G. W. Guthrie, | " " | Jan. 13, 1875. |
| J. B. Bucher,[1] | " " | " " |

| *Name.* | *Residence.* | *Election.* |
|---|---|---|
| R. Ottman,[1] | Carbondale, | Jan. 13, 1875. |
| E. K. Hill,[1] | Wilkes-Barre, | " " |
| F. O. J. S. Hill,[1] | Wilkes-Barre, | " " |
| H. L. Bacon,[4] | Huntington, | " " |
| J. L. Lamont,[1] | Moosic, | Jan. 12, 1876. |
| J. Cressler, | Wilkes-Barre, | " " |
| H. Hakes, | " | " " |
| E. R. Troxell, | Pittston, | March 8, 1876. |
| H. I. Jones,[3] | Hyde Park, | July 12, 1876. |
| J. Burnett,[3] | Scranton, | Jan. 10, 1877. |
| C. A. Loose,[7] | Wilkes-Barre, | " " |
| T. J. Mays,[7] | Upper Lehigh, | " " |
| M. A. Bradley,[2] | Wilkes-Barre, | " " |
| A. P. O'Malley,[5] | Plains, | March 14, 1877. |
| —— Nagle,[4] | Wyoming, | " " |
| J. S. Porteus, | Pleasant Valley, | July 11, 1877. |
| —— Churchill,[1] | Scranton, | " " |
| C. A. Spencer, | Dallas, | Sept. 12, 1877. |
| A. A. Barton, | Plains, | Jan. 9, 1878. |
| H. R. Davenport,[2] | Nanticoke, | " " |
| —— Drake,[1] | White Haven, | March 13, 1878. |
| A. O. Payne,[1] | Carbondale, | " " |
| M. B. Hughes, | Shickshinny, | " " |
| W. H. Faulds, | Luzerne, | March 12, 1879. |
| W. G. Weaver, | Wilkes-Barre, | " " |
| C. P. Knapp, | Wyoming, | " " |
| S. L. Holley, | Nanticoke, | Jan. 14, 1880. |
| F. Brundage, | " | " " |
| C. E. Hice,[7] | Muhlenburg, | Jan. 12, 1881. |
| D. H. Davis,[1] | Nanticoke, | Nov. 9, 1881. |
| L. H. Taylor, | Wilkes-Barre, | " " |
| J. Brooks, | Plains, | " " |
| J. J. Walsh, | Pittston, | Jan. 11, 1882. |
| J. L. Shuman,[2] | Wapwallopen, | March 8, 1882 |
| J. C. Rippard, | Wilkes-Barre, | " " |
| R. H. Hutchins, | Pittston, | May 10, 1882. |
| J. T. Howell, | Wilkes-Barre, | July 12, 1882. |
| A. J. Louder, | Ashley, | " " |
| J. L. Miner, | Wilkes-Barre, | Sept. 13, 1882. |
| L. L. Rogers, | Kingston, | Nov. 8, 1882. |
| R. G. Davis,[7] | Pittston, | March 14, 1883. |
| P. J. Higgins, | Wilkes-Barre, | May 16, 1883. |
| D. W. Kingsbury,[1] | Nanticoke, | Nov. 14, 1883. |
| D. H. Lockard, | Plymouth, | " " |

| *Name.* | *Residence.* | *Election.* |
|---|---|---|
| J. B. Mahon, | Pittston, | Nov. 15, 1883. |
| G. H. Kirwan, | Wilkes-Barre, | July 9, 1884. |
| R. H. Gibbons,[7] | Pittston, | " " |
| F. C. Johnson, | Wilkes-Barre, | " " |
| C. N. Cox,[7] | Sugar Notch, | Sept. 10, 1884. |
| C. Long, | Wilkes-Barre, | Jan. 14, 1885. |
| T. A. James, | Ashley, | " " |
| Maris Gibson, | Wilkes-Barre, | " " |
| W. S. Stewart, | " | July 8, 1885. |
| W. F. VanLoon, | " | " " |
| D. T. Jones, | Plymouth, | Aug. 12, 1885. |
| J. W. Cole,[1] | Hazleton, | " " |
| P. A. Quick, | Kingston, | Sept. 9, 1885. |
| J. P. Biehl, | Plymouth, | " " |
| G. T. Matlack, | Miner's Mills | " " |
| W. A. Brooks,[7] | Pittston. | Oct. 14. 1885. |
| J. F. Beckwith, | Plymouth, | Nov. 11, 1885. |
| F. F. Arndt, | Sandy Run | " " |
| W. C. Gayley,[1] | Deringer, | " " |
| H. M. Neal, | Upper Lehigh, | Dec. 9, 1885. |
| D. F. Smith, | Plymouth, | " " |
| C. H. Wilson, | " | " " |
| J. L. Wentz,[1] | Jeddo, | " " |
| J. W. Marstellar,[1] | White Haven, | Jan. 13, 1886. |
| J. R. Casselberry,[1] | Hazleton, | " " |
| W R. Longshore, | " | " " |
| T. D. Worden, | Wilkes-Barre, | Oct. 6, 1886. |

(1) Membership Not Completed, not having signed the Constitution and By-Laws, and not having paid Fee and Dues.

(2) Dead.

(3) Transferred to Lackawanna County Society, being in full standing in the Luzerne County Society, at division of the County.

(4) Membership Lapsed, from not paying Fee and Dues.

(5) Dropped from Roll, for unprofessional conduct.

(6) Resigned.

(7) Left County.

(8) Suspended for Dues.

(9) Honorary Member.

## QUARTER CENTENNIAL ANNIVERSARY

[From the *Wilkes-Barre Record.*]

The Luzerne County Medical Society is 25 years old—or will be in March, and the event was brilliantly celebrated at the Wyoming Valley Hotel, on Wednesday evening, January 13th, 1886. the occasion of the annual meeting of the Society. The routine business having been disposed of from 7 to 10, the company sat down at the latter hour to a sumptuous dinner, the first annual banquet of the society.

The tables were arranged in the dining room in the shape of a rectangular horse-shoe and were handsomely decorated with pyramids of macaroons, dishes of fruit entwined with vines, and there were also cute little bottles containing the stems and blossoms of campanile. At the head of the table sat Dr. Taylor, the retiring president who acted as toast master, and to his right sat Dr. Mayer, and Dr. Trimmer, the newly elected president. At Dr Taylor's left were Dr. Charles Burr, of Carbondale, and Dr. Underwood, of Pittston, two of the oldest practitioners in this section.

The other gentlemen present were Doctors Guthrie, Weaver, Davis, D. T. Jones, D. F. Smith, Ross, Hutchins, Mahon, Murphy, J. Brooks, Howell, Lockard, J. H. Jones, Hice, Longshore, Spencer, Stewart, Gibson, Diefenderfer, James, Barton, Miner, VanLoon, Johnson, and as visitors, Doctors Whitney and O'Brien, of Scranton; Worden, Moore, Butler, VanDoren, Pumyea, Wilkes-Barre; Charles Burr, Carbondale; Mebane, Parsons.

The menu bore the symbol R, which is so conspicuous on every prescription, as also a list of the officers, the committee of arrangements and a skull and crossbones. The menu was as follows:

# Menu.

℞

*Blue Points.*

*POTAGE*

*Green Turtle.* *Colbert.*

*POISSON*

*Boiled Salmon, Sauce Hollandaise.*
*Fresh Cucumbers.*

*ENTREES*

*Filet de Boeuf, Pique, aux Champignons.*
*Croquettes de Volaille, aux Petits Pois.*
*Stewed Terrapin, Maryland style.*
*Punch, a la Romaine,*

*ROTI*

*Turkey, Cranberry Sauce.*

*GAME*

*Quail on Toast.*

*SALADE*

*Lettuce, en Mayonnaise.*

*DESSERT*

*Ice Cream, a la Napolitan.*
*Gateaux, Assortis.*
*Claret Jelly, Roquefort Cheese.*
*Fruits, Nuts.*
*Cafe.*

It was after midnight when the plates had been pushed aside. Owing to the lateness of the hour we are able to give a synopsis of none but the admirable address of Dr. Mayer. They were informal, vivacious and greatly enjoyed. The only absentee was Dr. Mays, who telegraphed his regrets from Philadelphia, and expressing his kindly wishes. Regrets were also read from Dr. Corss.

The post prandial program was as follows:

## Program.

Address.....By the retiring President,
DR. L. H. TAYLOR.

Address.....“The Now and Then of Medicine,”
DR. EDWARD R. MAYER.

Toast.....“Our Sister Society—Lackawanna,”
DR. J. E. O'BRIEN, Scranton.

Toast.....“Quacks that are Ducks and Ducks that are not Quacks,”
DR. I. E. ROSS.

Toast.....“Science the Handmaid of Medicine,”
DR. THOMAS J. MAYS.

Toast.....“Our Medical Editor,”
DR. F. C. JOHNSON.

Toast.....“Old Physic,”
DR. G. UNDERWOOD.

Toast.....“Young Physic,”
DR. W. S. STEWART.

Toast.....“The Ladies,”
DR. S. W. TRIMMER.

Dr. Mayer's address occupied nearly an hour and was in his happiest and wittiest vein. It was consequently interrupted by frequent bursts of applause. It was entitled “The Now and Then of Medicine.”

# THE NOW AND THEN OF MEDICINE.

AN ADDRESS BEFORE THE SOCIETY, JANUARY 13, 1886.
EDWARD R. MAYER, M.D.

"*Dulce est desipere in loco.*" It is wise, as well as pleasant, for the "insatiate archer" in the battle of life to relax occasionally his oft drawn bow from its wonted tension and to let the slacked string vibrate in a manner attuned to mirth, and more melodiously than when it is strained in rigid readiness for work of offence or defence.

The members of our profession have many a solace and recompense, chiefly derived from the appreciation of their conscientious labors and from the affection and devotion of their clients. But at the best, "the lines are not fallen to us in pleasant places." All our paths are not those of peace; all our beds not those of roses. Most of us pass our lives, from the diploma to the death-bed, in undergoing trying ordeals, amidst "morns of toil and nights of waking." The introduction to our profession, from the rudiments on, has only been accomplished through constant and patient labor in the dissecting room, the obstetric chamber, the laboratory, the lecture hall, and in the exhausting nocturnal study of a half dozen sciences. The threshold once passed, then commences a lifetime of struggle, activity, nightly and daily toil; of self-sacrifice and devotion; of slavery to the demands, and often to the whims, of the public; of acquaintance with misery and poverty; of calls upon our sympathy and confidence; of exposure to tempest, cold and heat, to fatigues, vicissitudes of fortune, alternate hopes and fears, and often to indignities almost past endurance. We are probably more liable than other men to "the slings and arrows of outrageous fortune," and "the thousand natural shocks that flesh is heir to," but, in addition, are more often the objects of improper censure, invidious comment, and libelous accusations. More frequently than others are we placed in positions which invite from male and female "fellows of the baser sort" attacks upon our character—and to cap the climax of our insecurity, unfounded suits for malpractice, and attempts to blackmail, such as some of the best of us here to-night have experienced.

Our lives are thus, in the main, painted with sombre tints, if illumined by occasional hues of radiant coloring. Fortunately, however, the practitioner who is seasoned to his work, who bears about with him the talisman of rectitude of purpose, and who knows how to enliven his all-absorbing duties with incidental distractions, does learn to formalize the lessons of his daily life into a philosophic method,

which, in spite of carking cares enables him to present to the world the aspect of serenity and cheerfulness, and often to obtain for him their reality as well as semblance. If for no other reason, he is too busy a man to be despondent or melancholy, and loving his profession for its own sake, as he should to be worthy of it, he bears his burdens to the end, without complaint or protest.

To aid him in securing that contented spirit which it is important he should sustain through life, it is well, not that he dissipate by luxury, license or revel, but that he spend some of his leisure and some of his fees, "those sweeteners of toil," in obtaining amusement and social pleasure. How can he better accomplish this than by an occasional union with those of his own guild in a fraternal and convivial symposium? This we are wisely and happily doing to-night. "Far from the madding crowd" of patients, we who have been able to escape for the nonce from the "damnable iteration" of the night bell and the frantic telephone, fellows in joy and suffering, in toil and vigils, now for a brief season of rest, play at being sharers in each other's sympathy, mirth and even folly. Let us do this often!

Some one has written that "a dinner lubricates business." Certainly such a dinner as we are enjoying to-night is calculated to oil the machinery of our daily life, and to lessen the friction of its jarring cogs and wheels. It has been, as it should be, hilarious and convivial, a joyful rest from weariness, a fruitful occasion for interchange of thought, and a rebinding of the ties which unite us. It should enable us to return to our work with renewed vigor, after a brief contact with those material pleasures which are more "of the earth earthy" than our usual fare.

The gastronomic advantages of a good dinner are by no means to be despised. Who would not rather titillate his palate with the luxuries devised by modern culinary science, and enjoy with skilled relish the fragrant succulence of *filet de bœuf* and *croquettes de volailles* than surfeit upon the coarse and hearty viands which made the banquet of our ancestors a rude debauch? The boar's head, the baron of beef, the pork pies, the great puddings, and huge haggis, such as Dr. Radcliffe feasted the Prince Eugene of Savoy with, have now given place to such esculent dainties as our host of the Valley House has set before us to-night.

It may not be out of place, in this connection, to state that it is not generally known how much our improved cookery is indebted to medicine. In ancient times cookery was considered an important part of the healing art, and the word "*curare*," among the Romans, signified to dress a dinner as well as to cure a disease. Sir Theodore de Mayerne, called by some the second Hippocrates, and the physician of four kings, wrote, in the seventeenth century, the best cookery book of the

period. Doctors Hunter and Hill, in the eighteenth, and Kitchener, in the nineteenth century, gave to the world the best cookery books of their eras. In the present time, the selection of nutritious and palatable dishes is largely due to the skillful direction of accomplished physicians.

This very desultory address was commenced with the intention of dealing with the relations, physical and psychic, of the *Now* and the *Then* in medical matters, and seems to have diverted in the direction of things gustatory more than is consistent with the dignity of the subject. Having long since sent off the bones of the *cotelettes de mouton*, let us return now to our other *muttons*, and indulge in a glimpse at the professional and social lives of the doctors of yore, and contrast them with those of our own times and cloth.

The immense difference between the habits and sentiments of this and of the previous centuries, including the eighteenth, seems like a wide ocean dividing continents. One can perhaps imagine a courtly physician visiting his patients, with a sword instead of a catlin or lancet by his side, but is shocked to hear of two medical men of high standing drawing their swords upon each other and fighting like bravoes in the open street. Yet such a duello actually took place between the great Dr. Mead and Dr. Woodward, in the streets of London. The latter, slipping, fell, and Mead called upon him to submit and beg his life. "Not until I am your patient," aptly replied the other. The great Harvey was said to have been in his angry moments as ready to let out the blood, the circulation of which he had discovered, with his dagger as with his lancet; and even in later times the personal conflicts between doctors were often savage and sanguinary. Most of the great doctors in England, during the reigns of the two Charleses and of Anne, were gallants, roysterers and *bon-vivants*. They drank hard, entertained liberally and their dinners and suppers were debauches. The bottle and the board were then the doctors' favorite companions, and many a physician died from his devotion to them. They not only practiced, but prescribed voracious feeding and heavy drinking, and some of them dispensed and sold both liquors and tobacco. Many of them received their patients and the apothecaries who came to consult them in taverns, and prescribed over their wine and pipes. The celebrated Dr. Freind continually visited his patients when intoxicated, and once, when entering the chamber of a duchess was so confused as only to be able to exclaim, "Drunk, by God!" The patient, who happened to be in the same condition with the doctor, thinking he had divined her malady, sent him a huge fee to keep her secret, and became his most liberal patroness. Radcliffe was a confirmed drunkard; and Sir Richard Jebb, Beauford, Fordyce and Sheldon were not much better.

That in the profession, in those early days, there was devotion to such science as was attainable, brilliancy of intellect and aspiration for better things, is amply testified by the mere mention of the names of Sir Thomas Browne, Mayerne, Harvey, Sydenham, Heberden, Sir Hans Sloane and a host of others. They lived in a day when a belief in Astrology lingered, superstition prevailed, true science had made no progress, and the mental atmosphere of the times, in spite of its partial impregnation with the aroma of the principles of Baconian induction, and of Newton's discoveries in physical science, was not favorable to true research or logical deduction. Let us take a leaf from the proceedings of the Royal Society of England, in the days of Sir Hans Sloane, only one hundred and thirty-two years ago, and see how feebly the first steps of the society in the direction of Natural History compare with the strides that body and others like it are now making:

"June 5.—Magneticall cures were then discoursed of. Sir Gilbert Talbot promised to bring what he knew of sympatheticall cures. Those that had any powder of sympathy were desired to bring some of it at the next meeting.

"Sir Keneline Digby relates that the calcined powder of toades, reverberated, applyed in bagges upon the stomach of a pestiferate body, cures it by several applications.

"June 26 —Dr. Ente, Dr. Clarke, Dr. Goddard and Dr. Whistler were appointed curators of the proposition made by Sir G. Talbot to torment a man presently with the sympathetic powder."

Caricaturists and satirists, like Hogarth and Moliere, could not have struck the popular fancy as they did if their portrayals of classes of men had been merely travesties It is hard to believe that the fantastic and grotesque figures capering as doctors in the sick room, in "Le Medecin malgre lui," had their counterpart in actual life; and yet there is reason to suppose that there was a resemblance, if not a likeness. If there be anything in Voltaire's description of his countrymen, the French doctors of days earlier than his own, were more likely to have had simian, if not feline, characteristics, than our own Anglo-Saxon predecessors. Suffice it to know that the average British doctor of the seventeenth and earlier part of the eighteenth centuries was an odd figure. Portly, of sanguine hue and pompous air, ruffled and bewigged, carrying his long and big-headed cane, he was conceited, arrogant, turbulent and derisive. Even in the latter part of the eighteenth century and the earlier part of this, the British surgeon was too apt to be of the type of the great Abernethy—blunt, coarse and unconciliating.

"We have changed all this." The eternal laws of *development*, *variation of species*, and *survival of the fittest*, have gradually evolved from the blustering boor, the harlequin and quack of earlier times, the courteous, erudite and polished modern doctor, with his suave pro-

fessional manner and caressing ways. If he have affectations and mannerisms, he is, if at all worthy of his calling, at least a gentleman, and more apt than not to be learned, sagacious, prudent, conscientious and helpful. Considering his opportunities of licence, he is less disposed than most men to be immoral or intemperate, and, as a rule, he is more regardful of the trusts and confidences placed in his keeping than any other.

The charlatan, however, has undergone no variation of species since the days of the Troglodyte, and is yet a duck of the original anserine type, and the same melodious quack as when his congeners saved Rome. His outcries tend to destroy, not to save, those whom they awaken and alarm. If not the "fittest" of medical men, he and his type have both "survived" beyond all calculation.

The success that in every age has attended the enterprises of medical pretenders, is a laughable and yet mournful evidence of the credulity and ignorance of the generations. Invalids or hypochondriacs, ignorant of the cause of their sufferings, have gone, and still go, from one to another charlatan, giving precious gold, whether, as in early days, for charms and talismans, or, in later ones, for cordials, elixirs, blood purifiers, kidney cures, patent pills, restoratives of youth, cancer cures, and the thousand advertised and certified nostrums which have their day and sway and are then forgotten. One amusing way in which the history of quackery repeats itself is, that in the earliest times, as now, there were specialists in fraud, who won honors and pelf, not only from the vulgar, but from the eminent. Good Queen Anne had weak eyes, and went from one empiric to another for the relief they all promised her, and every fresh advertising scoundrel won her favor for a time with a new collyrium. She knighted one of these, Right William Reade, originally a botching tailor, and to the last a very ignorant knave, as his " Short and Exact Account of All the Diseases Incident to the Eyes " attests. He could neither read nor write, but dictated his absurd work to an amanuensis.

Yet after being knighted, and having put out a few hatfuls of eyes, he enjoyed the most lucrative and fashionable practice of his time. Our quack oculists, few of whom know the cornea from the iris, and none of whom can handle an ophthalmoscope, still put out eyes and deplete the pockets of the vulgar herd; but these are no days for them to be knights in, and the modern educated public shuns their doors.

A capital illustration in modern times of the readiness of the untaught rabble to accept any pretender's self estimate or advertisement, was furnished lately in Sicily. Towards the decline of the cholera epidemic there, last autumn, a Dr. Riforgiato came to Palermo, announcing that he had an unfailing remedy for the disease. He was, I believe, not an innoculator, nor a disciple of Ferran. But

the mob, without proof, believed his mere assertion, carried him on their shoulders to the town hall, and demanded that he should be placed in charge of the hospitals. Such was the furore in his behalf that the insurrection caused by it had to be quelled by the military. The ignorant and undeveloped public, whether of the Latin or Anglo-Saxon race, and occasionally a cultivated fraction of it, largely endowed with the bump of wonder, and disposed to accept "*omne ignotum pro mirifico*," are thus gulled and cajoled by the pretensions of the direct successors of Paracelsus and the other charlatans of old.

The empiric has gone through no process of evolution. His *selection* by his victims does not seem to us of the regular school to be at all a *natural* one. Now, as of yore, he is the vampire, sucking the life blood of his dupes, and fanning their fears and suspicions to sleep by waving in the air before them factitious advertisements and testimonials.

But, in charity, it must be admi ted that quackery, or rather delusion, is not all in the hands of mere impostors. There is a large body of honest and weak enthusiasts who, by nature credulous, untrained in the logical methods of science, uninformed as to the persistent laws of nature, help to swell the list of obstinate sufferers. There are the devotees of one therapeutic method who have founded upon a few well known and isolated facts as to the specific operation upon the tissues of minute doses of some drugs, a Procustean system, by which they either stretch or abridge all other known facts in medicine, and profess to have discovered a narrow but universal law which fits every case. Many of the supporters of this creed are honest enthusiasts. Those of them who attain to success and shekels, administer as potent pellets and potions as we do. Their following is still large, and their mode of practice so facile that their laymen and laywomen have taken it up. Here and there even one of their clerical enthusiasts will, on week days, condescend to change his austere garb for the "motley wear," and dispense to his flock, granules as well as grace. We all have in our memories the familiar figure of the officious female who goes about from house to house urging her sick neighbors to dismiss their doctor, to employ her own, or at least to substitute for their remedies the drops she carries in her case.

Then there are those sainted women, and long-haired, lank, elderly apostles, who, commencing their career at the foot of the skyward-pointing ladder as volunteer homœpathic prescribers, have gradually climed to the bad eminence of the arrogation of such intimacy with the Almighty Creator of the world's laws as to assert that He, overlooking the agonies of millions of His despairing creatures who are imploring His aid, will, upon the appeal of these self-constituted almoners of His bounty, immediately heal the disciples of the *Faith*

*Cure* who come to Him through the medium of the favored few who alone have His ear. The success of these apostles is undoubtedly greater than that of their progenitors. Multitudes of apparent miracles are performed by them, in accordance with the well-known laws of "expectant attention." Cases of sympathetic, epilepsy, neuralgia, hysteria, fixed joints, and even asthenopia, &c., do get well, as they oftener do under God's really appointed means. But the wonders of these Protestant miracle-mongers do not compare with the better authenticated ones of Lourdes and the chapel Knock, or with the marvels of the mind, magnetic, and spiritualistic cures performed by blasphemers and infidels.

In spite of the fruitful advances made in our era in scientific discovery, in breadth and liberty of thought, increased comfort and happiness of all classes, long life and better health, there be pessimists who insist upon it that we are "going to the dogs." They dread the march of science, they fear that the extension of this or that form of religion, that some dreaded general unbelief in any religion, that agrarianism or socialism are about to upset the social fabric, and they sigh for the good old times, "the brave days of old," when missiles and fire-brands were used for arguments, and kingly rule and feudal tenure kept the masses in check.

For one, I rejoice that I have been permitted to live in the latter half of the nineteenth century, and to witness and share in the progress and marvels which have marked it as the best part yet of the revolving cycles.

We have much more to be thankful for than for good dinners—more universal peace, kindness, comfort, freedom, and health, than our forefathers possessed. We live in the enjoyment of the coruscation of the most wonderful discoveries of the centuries, and in the fruition of the results of mental achievements surpassing the wildest dreams of the philosophic aspirants of old. We medical men have special reason to rejoice in the knowledge that the march of the sciences involved in our own studies and calling, has been *pari passu* with the general advance.

In no other period of human history has knowledge stepped on with such tremendous strides as during the last forty years, or so many new chapters in the biography of the universe been written by philosophical speculation and experiment. The invention of printing, of the telescope and microscope, the discoveries of Newton and Laplace in astronomy, of Harvey in physiology, and later of Priestly in chemistry, and Franklin in electricity, magnificent achievements as these were, have been cast into the shade by the successes of the present day, of which these were the precursors. It is not yet a half century since the discovery was made of the conservation of force, and the practical identity of heat, light, magnetism, and electricity, and

only a little more since Lyell first placed our geological knowledge upon a scientific basis. It is much less since the spectroscope enabled us to know the identity of the solar and stellar constituents with those of our own earth. It is needless to speak here of the wonders of the telegraph, telephone, electric illumination, and the thousand practical applications of science which have all come within a few years. But perhaps the greatest attainment of this age of ideas has been the complete revolution of human thought which has been evolved by the speculations following the announcement to the world, only twenty-six years ago, by Darwin, of the theory of natural selection. This theory, obscurely hinted at since the days of Aristotle, was originally, as to its fundamental principles, propounded by Dr. Wells and Mr. Patrick Matthew, who. however, failed to see its wide application, and by Alfred Russell Wallace, who took in its scope, but modestly surrendered the right to expand it to the majestic genius of Darwin. By the latter the principles of the origin of species, or "natural selection," as he preferred to call it, the variation of types and the survival of the fittest have been so elaborated and confirmed by experiment, analogy, and proof, that in the region of natural history little scarcely seems left to be completed. Huxley and Tyndall have still further extended these researches, and the immortal Herbert Spencer, the greater than Francis Verulam, has exhaustively applied the principles involved, to the wide domains of sociology, political and moral economy and the whole history of the human race.

The complicated arrangements of organisms in the world's Fauna and Flora, in groups within groups, resembling each other at the bottom of the scale and varying most widely at the top, all confirm the presupposed theory of Darwin, of "descent with modification," and are inexplicable on any other theory, while the facts found in the embryonic elements of organisms agree with all the facts of classification, and signify that the various forms of organic life have arisen by gradual digression from common originals. If they do not signify this, the phenomena of nature then have no rational meaning whatever, and it is in vain that we explore them. The finest confirmation and most abundant proof of the Darwinian theory have been furnished by a distinguished American savant. The arguments against the Darwinian views, formerly urged on the ground of the absence of links between living and defunct species, could only then be met by the apology for the fragmentary character of the geological record which had, presumably, as yet revealed only one osseous form out of thousands. But these arguments have been completely overcome by Professor Marsh's discoveries of the descent of the highly specialised horse through a perfect series, from the *eohippus* in the lower eocene, through the *orohippus* in the upper ecoene, with four complete toes

on the fore-foot, the *mesohippus* of the lower miocene with a splint bone in place of a disappeared toe, the *miohippus* of the upper miocene, with only three well developed toes, the *protohippus* of the lower pliocene, and still further up in the scale, the *pliohippus* in the upper pliocene, with a hoof almost like that of the modern horse.

It may be confidently asserted that the scientific public of the day, its journals, and all its members, with less than a half dozen trifling exceptions, have adopted and taken to their hearts the whole Darwinian theory as the only one capable of explaining the facts of the universe. The few sceptics who have had any scientific training and still recalcitrate "while the lamp holds out to burn," are influenced by theological or metaphysical objections, which, of course, are irrelevant in a pure question of science. It is manifest now that this great truth, for the triumphant establishment of which only one link is wanting—a link not really needed to complete the chain of evidence —will finally prevail, in spite of the mistaken theological opposition to it, which will in the end, after fruitless contention, succumb and accept, as it has in every previous encounter with scientific achievements gracefully, if tardily, yielded.*

We have not reached the consummation of all knowledge by scientific discovery, and the field to be opened is yet immense, but the inspired genius of God's latest and most perfect creature, with its developed reason, has now lifted the veil, explored the arcana of the universe, unearthed its secrets and solved many of its problems. At last the long hoped for and final reconciliation between science and religion is dawning upon us as a probable result of pure scientific study. Herbert Spencer has proven that the law of universal evolution is a necessary consequence of "the persistence of force." To use the language of John Fiske, "it has shown us that all the myriad phenomena of the universe, all its weird and subtile changes in all their minuteness from moment to moment, in all their vastness from age to age, are the manifestations of a single animating principle that is both infinite and eternal."

The doctrine of evolution asserts as a scientific truth, that there exists a power to which no limit of time or space is conceivable, and that all

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*Since the above was written an apt instance has occurred of swift retribution to the temerity which occasionally spurs the mind uninstructed in scientific methods of deduction, to "rush in" to that controversial arena, foreign to its province, which even "angels fear to tread." The Hon. William Gladstone, leaving the domain of Parliamentary tactics and rhetoric, in which he is "*facile princeps*," has ventured to chop logic with the veterans of natural history, and to attack the work of an eminent scientist and divine, Mr. Reville's "Prolegomenes de l'Histoire des Religions," recently translated under Max Muller's auspices. It is almost pitiful to read Professor Huxley's late reply to Gladstone's jejune criticisms. The silver-tongued statesman should be struck so dumb by this defense of the truth as to be ever hereafter inarticulate about matters of science.

the phenomena of the universe, whether physical or pyschic, are manifestations of this eternal and infinite power. A prose poet has called the universe, "the star-domed city," and reminded us that "God's glory beams through every crystal and grass-blade." This language of poetry describes and means exactly and only what the dry scientific terms of the evolutionist mean when he speaks of the "unknowable."

So, through these new confirmed speculations, we have attained a grander as well as more rational view of the glory and work of the Creator, "the infinite power that makes for righteousness," as well as a truer knowledge of man's relations to his Maker, to his fellow-men, and other fellow-creatures. We are at last placed in possession of the knowledge of a universal system and a beneficent order of things that comports with the progress of our own intellects. The stars and the earth, its plants and animals, their exhumed remains, the growth of man, the development of his language, his social and public life, all these tell the same story, soon to be the new creed of every free and thinking person. I am not optimist enough to believe that the time is near at hand when the lion and the lamb shall lie down together, universal peace prevail, the brotherhood of man be established, kindness to our fellow-animals be the custom, war and contention cease, poverty pass away, crime and violence be at an end. But I do believe that the recent triumphs of science, their application to the industrial arts, higher views of God's sovereignty and government, are now and further will be, elevating and modifying the masses, who did not before think, read or observe; that they do and will, in a geometrical ratio, multiply the intellectual cravings and acquirements of all classes of men, satisfy more perfectly material wants, elevate the moral character of our race, and finally help to establish that general concord of the peoples, that "glory to God in the highest, and on earth peace, good will towards man," which Christ taught, and which constitutes the true "religion or binding together," whatever desirable tribular, conventional or local forms the religion may assume.

And what has all this to do with medicine or with any medical subject-matter of such a discourse as I have been invited to give before a body of medical men? Much! We, as professedly men of science, are deeply interested in the progress of all knowledge, and as humane men and instructors of our fellows in all that concerns their bodily and mental welfare, should be solicitous that our environment be one of advance, culture and breadth in all that relates to our calling. Our profession is founded upon the sciences of anatomy, human and comparative, of physiology and the laws of our being pertaining to it, and of chemistry, which has introduced and developed most of our therapeutic resources.

Fifty years ago, while our profession was a beneficent and honored one, had attained to much and was illustrious from its numbers of

earnest and distinguished workers, it was a vocation, an art, but scarcely a science. Since those days, stepping more than equally with the progress of general science and of the theories and facts we have been considering, not only with strides but with leaps, has our department of knowledge bounded on and upwards, and vaulted to an eminence never before climbed or aspired to. From this "coigne of vantage," we, who occupy it, can proudly survey the surrounding heights of other provinces and claim, at least, an equal altitude. We have at last a science, an aggregation of sciences, not perfected—for when will any human work be perfected until the seal of the end of time is stamped upon it?—but one in the front rank and sharing in eminence with other sections of science.

The study of biology, upon which our present physiological knowledge is based, may be considered to have only commenced in 1839, when the cell doctrines of Schwann and Schlieden were first announced, and the former expressed the important generalization that nucleated cells are the basis of all animal and vegetable structures. I first heard of this only in 1842, when the distinguished Samuel Jackson, of the University of Pennsylvania, who had formerly been content to teach the old, crude, simple physiology, described to his classes, with eloquent and contagious enthusiasm, the wonders of the new doctrine. It was only in 1846 that Morton introduced anæsthesia by ether—although, with fair arguments, an American predecessor in this discovery is claimed—and in 1847 that Sir James Simpson introduced that, by the previously discovered chloroform. What an advance there has been, since those days in the '40's, in our whole line of battle against disease and death, and how the ranks of the line have been recruited, and how rapidly the recruits have become veterans! It would be out of keeping to take up your time with a detailed description of what we all equally know, of what has been done in physiology, surgery and medicine, during the last forty years, most of it in the last twenty years, and the greater part of this in the last ten. The youngest of our members, who have graduated during the last five years, if properly instructed, have memorized concrete facts which we, the elders of the profession, have been compelled to learn separately and in rapid succession.

Perhaps, however, I may be allowed to render in a hasty account-current, a list of the most important of the triumphs of these latter days of achievement. We have to record an immense advance in physiology and the knowledge of the structure and functions of the various organs and tissues, both healthy and morbid; the perfection of microscopic observation, and localization of the different cerebral powers; ætiological advance, particularly by the discovery of the bacterial origin of numerous diseases, through the researches of Pasteur, Koch and others; improved methods and instruments of research and

diagnosis by the stethoscope, microscope, chemical reagents, æsthesiometer, thermometor, sphygmograph, laryngoscope, ophthalmoscope, otoscope, endoscope, electric light and galvanic current; the advance in hygienic knowledge, preventive medicine, antiseptic surgery and improvement of antiseptic and antibacterial agents, such as carbolic and boracic acids, ozone, thymol, iodoform and chloral; and last and best, corrosive sublimate, hydronaphthol and potassio-mercuric-odide; and not only of ordinary and effective germicides, but of the novel, and perhaps practical, methods of fighting fire by fire, of employing a colony of harmless microbes to extirpate a tribe of noxious ones.

Then in surgery, we have resection, exsection and reunion of bones; new operations for hernia, litholopaxy, laparatomy in its various modes, section of stomach and pylorus; cholecystotomy, removal of the kidneys, Battey's operation, tracheloraphy, skin-grafting, mechanical treatment of spinal curvatures and of all contractions and deformities, removal of growths by electric cautery, and of bony tumors by the surgical engine; the antiseptic treatment of wounds before referred to; aspiration, and a multitude of improved methods and instruments too numerous to catalogue. Besides all of these have been the universal adoption of general anæsthesia and of local anæsthesia by the ether or rhigolene spray, and last and best of all, by the wonderful cocaine and theine. We have also improved ophthalmic, aural, nasal, pharyngeal, laryngeal and dermatological procedures, and perfected obstetric and gynecologic methods.

When we come to our new therapeutic resources, one's breath is fairly taken away, and mental dyspnœa produced by repeating or listening to the enumeration of the now accepted novelties. We have the various methods of securing improved nutrition and multitudes of artificial foods; forced feeding by the syphon and enema, the rest cure and massage, faradization, the constant current and static electricity; air, steam and water baths and douches, new methods of applying heat and cold; inhalations, sprays and medicated and mineral waters without number, and beyond all, the practice of hypodermatic medication.

When we descend to mere drugs, we who know, do not concur with those rare transcendent doubters who affirm that no remedies of value, save the bromides, have been discovered of late. These men must long since have taken the oath "never to alter the established practice of physic."

It is reported that the great Sydenham asserted that he could carry the entire pharmacy of his time in the huge pouncet-box at the head of his cane. We can literally do better than this, and with our concentrated remedies, transport in a pocket-book means sufficient to meet most professional exigencies. But "the fathers" could not have

conceived of the multitude or the potency of the contents of our present repertory.

What can we, who have profited by and triumphed over their success, say sufficiently in laudation of the efficacy of chloral, croton-chloral, paraldehyde, cocaine, theine, fuchsine, caffeine, pilocarpine, eserine, picrotoxine, physostigma, apomorphia, hyoscine, antipyrine, resorcin, salicine, salicylic acid, terpine, the oleates, nitro-glycerine and amyl; of veratrum, gelsemium, viburnum, collinsonia, hamamelis, leptandra, iris, hydrastis, phytolacca, baptisia, viscum album, piscidia, convallaria, adonis, cactus, helonias, aletris, stigmata-maidis, grindelia, yerba-santa, and particularly cascara; and of an army of other potent remedies, many of them the products of our indigenous Flora, and introduced by the genius and energy of our own countrymen?

Our therapeutic resources are now so immense as to be even a source of embarrassment. To meet the same indications we are often at a loss which one of many appropriate medicines to apply, and when in doubt as to the choice of one of two apt remedies in a given case, might sometimes well exclaim, "how happy I could be with either, were t'other foul taster away."

There is not an atom of truth in the charges common among the vulgar, and offensively hinted about by the exponents of the several sects in medicine, that we are "old-school physicians," *laudatores temporis acti*, and ignorant of, or indisposed to examine or accept, new methods or new remedies. The charge is equally false with the ludicrous one which gives us, from a certain sect, the title of "Allopaths," than which none could be more absurdly inapplicable. Whatever some of our predecessors may have been, or rare exceptions among us may be now, we who rejoice in the title of "Regular Practitioners" are, as a body, cultivated, free, ambitious and aspiring medical seekers after the truth, with the single and conscientious desire to perfect ourselves in the knowledge of nature's laws involved in our calling, and to extend our experience of these, for the benefit of the suffering part of our race. Endeavoring to free ourselves from the superstitious observance of time-honored precepts or conventional rules, our researches, our theories, our practices, are as broad as the universe, and as all-embracing as are our sympathies with human sorrow. Tied down to no formula or exacting determinate modes, bound by no edict to practice in conformity with any prescribed system, or to march under the flaunting banner of any dogma, not alarmed by calumnious aspersions of either orthodoxy or heresy, we are ready to examine and test any and every theory and remedy, and are not tooproud to adopt any contributions proving acceptable, from our homœopathic or eclectic brethren, or even from the herbarium of the *sage femme* or Indian doctor, and we are willing to admit that there is no system, however empirical, from which we may and do not cull

something of value. We are exploring every field, even if we gather sometimes more brambles and thistles than flowers. We dig into the bowels of the earth, dive into ocean's depths, soar into the air, and make use of all the discovered forces and substances of nature, in search of remedies. Our motto is, "prove all things; hold fast that which is good;" and we are, in a word, of all others in this age of science and ideas, the most active exponents of search for novelty, of experiment, of analysis and observation, as well as of induction and cautious reasoning. We have now means and remedies capable of controlling all the remediable morbid condititions of the human frame, and considering the recondite nature of the principle of life, the transcendent and inexplicable mysteries of many parts of our organization, the obscurity of many diseases, and the diversity of constitution in and reception of remedies by different patients, the success of modern medicine in the hands of cultivated practitioners is a matter for marvel, and is nearly all that we can desire.

Mainly because of improved medical methods and the sanitation introduced by our profession during the last half century, the mean duration of male life has been increased by two years, and of female by three-and-a-half. It would seem from this, that the doctor, always the tender friend of woman, had been more careful of her interests than of those of her ruder half.

We are yet human and far from faultless. Among us, as in other callings, tribal and individual peculiarities and prejudices assert themselves. There are still among some of our number, tendencies to be too conservative, to adhere to the older methods, to glide smoothly along in the beaten tracks. Another and a larger fraction of our body may be too enthusiastic and emotional and inclined to indulge in the medical crazes of the day, which have their rise and then their eclipse. Among the latter I would class the excessive use of the tracheloraphic operation, Battey's operation, and other surgical novelties which have been found to be required less often than originally supposed, and to be capable of substitution by milder methods. So, in therapeutics, many once vaunted remedies are now in their decadence.

But failing these, whether surgical procedures or new remedies, the lapse of time will always separate the wheat from the chaff. Progress is the order of the day, conservatism and caution only its brakes. "Cavendo tutus," is sometimes a cowardly maxim. It is better to go forward too fast even with danger of collision or running off the track, than to jog and rumble slowly over the ruts. One impediment in the way of our therapeutic advance has been the conservatism of some of our leaders, who fearing that their sanction of new remedies might appear to confirm the views of specific sects, or forward the interests of certain able and adventurous pharmacists, have continued in spite

of general medical sentiment, to refuse to notice or give credit to some of the proven most efficient remedies of the age.

Lofty as is our general standard of cultivated good sense, we are compelled to admit the existence, in our ranks as in others, of odd and exceptional characters with fantastic idiosyncrasies and perverted instincts. Some of these only see through glasses darkly, or are merely myopic; others are mentally color-blind, or are abnormally astigmatic and can only see and define certain lines out of many in any *radiating* question. When a number of these who have the same perversion of vision, aggregate and agree, as occasionally happens, a harmless individual defect becomes, by multiplication, a mob of delusions, sometimes dangerous to the peace and welfare of the community. Of such origin and character are the obstructions now attempted to be piled up in the path of scientific physiology and therapeutics, by the affectation of morbid sensibility or by the obstinate prejudice of those who seek to oppose extreme legislative barriers to vivisection. Tenderness to our kin of all races and degrees, should be the outcome of advanced knowledge, but he is an enemy of his kind who would place impediments in the way of those carefully guarded and gently managed experiments, performed by and only by scientific experts, upon the short-lived lower animals, which have been most important factors in developing our science and in giving us our present power of relieving human and other animal suffering.

The other *cranks* who still oppose vaccination, but who yet may be found in our profession in Great Britain, possibly here, are fortunately too insignificant in number and character to require notice.

What little of all such retrogressive and retarding influences as continue to linger in and to hamper our profession is, however, now yielding before the general enlightenment of our members, and we can almost see the break of the day when there will be no medical sects, when peace and good-will will prevail, the strict interpretation of artificial and cast-iron codes be no longer enforced, and all our tribes be united with one common aim, each individual's conscience and appreciation of *esprit de corps* being permitted to be a law unto himself. In this one respect we may, in time, be led to retrograde judiciously under the influence and after the example of the older communities of Europe, among whose medical associations such restrictions as prevail with us are unknown.

The credulity and superstition which among the masses have survived from the days of villainage, still exist in our public to so great a degree that the most erudite and skillful physician cannot yet always compete with the charlatan. The multitude love mystery and display and prefer the notoriety-seeking pretender to the cultivated physician, who modestly pursues the even tenor of his way. But the time is fast approaching when this uninformed public, compelled by

its surrounding atmosphere of learning, will accord to the scientific doctor the appreciation he merits and now receives from the discerning few. In that utopian time, the law of the survival of the fittest will surely be asserted, and then, as is partially the case now, only the most alert, the best equipped, most studious, apt, conscientious, pains-taking and practical of us will survive and win the goal of success.

I learn that some of you have expected me to discourse to-night upon the history of our Luzerne County Medical Society. If I commenced this talk with any such intention, it may well be charged that I have forgotten my chief topic, and have rambled off into a general and diffuse colloquy "*de omnibus rebus et quibusdem aliis.*" You may attribute this if you please, to the garrulity of age and a tendency to mental wandering. Some of you may, moreover, think that I have too audibly "talked right out in meeting."

It is a scandal against the fair sex that their postcripts are the most important part of their letters. At the risk of being accused of feminine weakness, I will try to make this postscript important, but fortunately for your increasing weariness, will make it brief. Professedly and by "a legal fiction"—and I don't know why the lawyers should monopolise all the fictions—we celebrate to-night by an antedating of nearly three months, the twenty-fifth year of the genesis of the Luzerne County Medical Society. I could, if I would, tell you just how this unlicked cub of a society came into the world. But parents do not always care to tell the family progeny all about the latter's paternity, and there have been some missing links here which it would perhaps be well not to elaborate upon. I fear that the committee of this body who appointed this feast, had their suspicions that the society was a premature child, and were determined to disgrace its progenitors and publish the fact to the world by compelling the celebration of the anniversary three months before the proper time. Ungrateful children, shame be your portion! We older men have more consideration for the reputation of our patients, and do not publish their lapses. However this may be, we know that our brats were viable and that we have taken good care of them. Have they not, some sixty of them, undergone evolution since their father's time? Some of us, the forfathers were hirsute, almost quadrumanous, and could scarcely talk. "*Circumspice.*" Look around this table at today's representation of our society and listen to their chatter. What better argument for evolution and development could you have, than from "looking on this picture and on that."

When I first unfurled my banner to the breezes of Wilkes-Barre air and exposed my resplendent shingle to its norroding fogs, twenty-nine years ago, the present large and populous city was a rustic borough of some five thousand population. It was then, as since, the seat of

wealth, refinement, and cultivation; the home of the select, distinguished and brilliant men, and of lovely and intellectual women. But it and the beautiful valley of which it was the centre were sequestered spots, simple and primitive, the majority of the inhabitants having little communication with the outside world, and only beginning to have their dreams disturbed by the sounds of hammer and pick, the railroad whistle, and the hum of commercial enterprise. In those early days the characteristics of the professional men of this region partook of the simplicity and lethargy of the main life around them. The medical atmosphere was one of Cimmerian darkness, and the physicians who were supreme in their influence and success had not yet received any of the "divine afflatus" which already permeated the air of medical centres, or become imbued with the modern doctrines then in vogue. There were several younger men of my own age, fresh from the schools, who were all that could be desired and to whom these remarks do not apply. Of the seniors, soon to pass away from the stage of action, there was one brilliant original whose figure and character will never be forgotten by those who knew him. Full of fire, force and eloquence, a poet, an orator of no mean abilities, with great personal magnetism and considerable erudition in classical and general literature, his influence was such that he ruled his patients and the community with a rod of iron and long was sovereign in his medical domain. He had great natural tact and medical instinct, and if properly instructed he would have become and remained eminent in his profession. But he was a scoffer at and scorner of all innovations, and contended that nothing new had been accomplished in our art since the days of Brown or of John Hunter. His remedies were calomel, quinine, opium, camphor and alcohol, and I doubt if he ever used any others. Soon after my professional entrance upon this field, I was passing his house in the early hours of a lovely summer morning, after having spent a night with a patient whose term of agony had been materially lessened by the use of such instrumental devices as we all occasionally employ. The old doctor, who was sitting on his step, fanning himself, accosted me, and observing some suspicious looking pieces of steel projecting from my pocket, asked me what these were. I exhibited and explained to him the use of the instruments, which he curiously examined, apparently having never seen them before. After pondering for a moment, he exclaimed, with an expressive oath, "young man, for God's sake throw those vile things in the canal, and never more use such abominations. They are the invention of the devil." The "grand old man" died not many years after. I think his heart was broken by the tide of innovation, which he deplored and fought to the last, leaving him stranded high upon the shores. Then there were other pure and capable men who did the best they could with their lights, enjoyed

the confidence of the community, and had large followings. One of the most esteemed and successful of these, once, with modest triumph, let me into a secret of his success in obstetric procedure. He attributed this to a method of his own discovery, which he considered worthy of publication, but had not yet mustered courage to place in print. This was that of incising the foetal scalp with scissors, inserting the index between it and the calvarium, and thus forcibly extracting. It is needless to say that this really good man had never owned or seen a forceps. I do not remember having seen his method referred to in print, but I have lately seen the cicatrices left by him upon the now bald heads of several of his victims.

Such were some of the lights of our profession in the early days of this region. Animosities between medical men were rife, and courtesies, professional or social, rare. It became necessary to infuse new life into the calling, and to resublime the medical *caput mortuum.* Some few of us, who thought we knew more than our elders, put our live heads together and in the ides of March, A. D. 1861, commenced the organization of the Luzerne County Medical Society. It will be remembered that then our country had an immense area, and included in its limits that large territory which, under the name of Lackawanna county, has since seceded from us, to its great gain and our loss. So the founders, the patriots, the original signers of the declaration of April 17th, 1861, included in their limited number several distinguished physicians of the now great and prosperous city of Scranton, and county of Lackawanna.

The founders of our Society were Doctors Rooney, of Hazleton; Moody, of Lehman; Throop, Ladd, Marr, and Green, of Scranton; Tubbs, of Kingston; Lawton, of Pittston; Cressler and Casselberry, of Conyngham; and Urquhart, Dennis, C. Wagner, E. B. Miner, and myself, of Wilkes-Barre. We were "few and far between," but we were, and have ever since been, increasingly becoming a power in the goodly land we occupy. We and our successors, whom I see around this table to-night, have been fortunate in bringing order out of chaos in all medical matters among us, in unifying the decent and honorable members of our guild in one harmonious whole, in dignifying its character, and in demanding and in securing from the public the appreciation and compensation which we, its members, earn and deserve.

I am to-night filled with gladness that I, one of those who assisted in the inception of this enterprise and important organization, am permitted to join in its quarto-centennial celebration. I am still better pleased to believe that the labor originally committed to a few, has been shared in by so many capable men, well fitted to carry out, elaborate, and improve upon what their predecessors have accomplished. Instead of the fifteen few who laid the foundation, we now

have sixty constituents, most of whom are skilled, expert, and enthusiastic members of our society and workers in their profession. Our society has grown not only in numbers, but in strength of purpose, interest in its work, prompt attendance upon more numerous meetings, and value of its contributions to science in learned papers and discussions. We now constitute, not a little, but quite an extensive medical microcosm of our own, able, if our modesty would permit, to be felt as a power in our state and national councils, and are represented by as capable an average of medical men as exist anywhere. We have among us men skilled in diagnosis and original and successful in therapeutics. We have surgeons who perform successfully all the most delicate and important operations, ophthalmologists, aurists, laryngologists and gynecologists who will compare with the best specialists in the cities, and who will do as well with their patients, without the exaction from them of inordinate fees. We are as a rule studious, apt to investigate novelties, and in the choice of new remedies in advance of some of the more conservative cities. Our patients often remark to us that when visiting New York and Philadelphia, and in need of some accustomed remedy attainable from any pharmacist in Wilkes-Barre, they have explored the town from druggist to druggist in difficult search for their need. When they do find what they want, they are usually cautioned by the man of drugs, that this to them long used and familiar remedy, is something very new and rare or dangerous. I only mention this as a straw showing how the wind some times blows *from* our direction and not towards it. From the superabundance of our intellectual stores we have been able to permit a drain upon our resources and to give our "sum of more to that which had too much," our great metropolis and medical centre. From our ranks have gone to Philadelphia, the brilliant and gifted ROTHROCK, now an eminent professor and authority in botany, and still later, the discoverer of the analgesic virtues of theine, the acute and learned physiologist, microscopist and experimental therapeutist, our own genial MAYS.

I could dilate upon such topics as I have presented to-night, for hours. But it is long past "the very witching time of night," and I have ever and anon been hearing your "curses not loud but deep," and your subdued exclamations of "Hold, enough!" Wishing long life, increased membership, usefulness and honor to our own society, I will close by proposing the health of our honored guests, the members of the Lackawanna County Society, our yet beloved daughter who years ago left her then humble home and went to housekeeping in a grander mansion.

# RABIES.

READ BEFORE THE SOCIETY, MARCH 10, 1886.
R. DAVIS, M.D.

Rabies is a disease of the lower animals, especially of the canine and feline species. This is probably the first time in the history of this society when one of its members has been appointed to read a paper before it, upon a disease peculiar to dogs and cats, yet such is the task assigned me to-day.

But Rabies is capable of being communicated by infection from the dog, not only to many of the lower animals, but unfortunately to human species also, and this latter fact it is that gives to the disease its great importance, and renders the subject one entirely appropriate for the consideration of this Society.

In man the disease is called hydrophobia, which, literally translated means "water-madness," or more accurately, "fear of water."

The importance of this disease and the prominence given to it in the thoughts of the people, generally is due, not to the frequency of its occurence, for probably not fifty cases of genuine hydrophobia occur among our fifty million inhabitants in a year, but rather to the fact that every person who is so unfortunate as to contract it dies. Only one death from hydrophobia in a million! How very insignificant is this mortality as compared with that from that almost equally fatal malady, diphtheritic croup. And yet how very different is the general behavior of the public towards one and the other. A mad dog at large in the streets creates the utmost consternation and panic, while the corpse of a victim of diphtheritic croup will be followed in crowds to the church and graveyard, and often the lips of the dead are kissed. Thus instead of shunning the disease it is actually invited to come.

I shall not attempt to give an exhaustive treatise on the subject of Rabies and hydrophobia, but shall content myself with a brief consideration of some of the more practical questions connected with the subject. As true hydrophobia never occurs in man except by infection from some animal suffering from Rabies, and most frequently from dogs, it becomes important for physicians to become familiar with the manifestations of the disease in dogs. I shall, therefore, attempt to give you a description of the behavior of this animal when suffering from this malady, merely remarking that, as I have never, to my knowledge, seen a mad dog, I must be entirely indebted to others for this description.

It is most important to be able to recognize the *premonitory symptoms* of the disease, as then the dog may be safely secluded or destroy-

ed before a disposition to bite is developed. It is safe, on general principles, to suspect every sick dog of being on the verge of madness. Any marked change in a dog's habits or disposition is cause for suspicion. For example, if a dog, usually of a friendly disposition, becomes morose, sullen or resentful, or vice versa, or if he develops a disposition to bark, especially at imaginary objects, and with a changed voice, or shows an increased fondness for his owner, by fawning and licking, or a tendency to pick up and swallow straws, threads, pins, paper and other objects, or to lick cold smooth objects, as a stone, a boot, a piece of metal or the nose of another dog, or if he devours his own dung or urine, or smells and licks the anus or generative organs of another dog, or exhibits sexual excitement, or if a naturally quiet dog flies into a violent passion at sight of another dog, and attempts to bite it, or if a social dog seeks seclusion and darkness, or if he bears punishment without whine or howl—all these, or any number of them, are manifestations which should excite the gravest suspicion. A disposition to wander from home and remain away a day or two, is a very significant sign of madness. Barking without object, constant moving about as if in search of something, scraping, biting pieces of wood or iron, tearing pieces of clothing &c., should beget grave apprehensions. Some dogs rub the chops with the fore paws and make violent efforts as if to dislodge some offending object from the teeth; others turn the head and eyes as if following some imaginary objects and snap at them. If the dog has recently been bitten, and he develops a tendency to bite, rub or gnaw the wound, and if this become red, sensitive and swollen, the fact should be taken as strong proof of the existence of rabies. This stage lasts from a half to two or three days.

The next stage of the disease is characterized by paroxysms of wicked fury, in which the patient will fly at and bite every living object that comes in its way. If confined in a kennel, he will rush at the door, or if fastened will tug at his chain, or gnaw the posts and walls of his kennel, or tear pieces of wood or other objects within his reach, and sometimes lacerate his own flesh, or bite off his tail or his toes. Alternating with these paroxysms, are periods of quiet, during which the symptoms of the first stage only are manifested, with evidence of great prostration. During the paroxysms the animal is manifestly the subject of acute delirium, has hallucinations; snatches and bites at unreal objects, turns on his best friends, seizes a stick or iron bar, biting it until the teeth are detached and the gums lacerated. Food is rejected and vomiting occurs, the material vomited being mixed with blood and mucus.

Next comes the paralytic stage, in which a swaying motion in walking is seen, and the lower jaw hangs pendant and allows the escape of viscid saliva. The result is invariably death.

There are occasionally other types of the disease, and notably the lethargie, or tranquil form, in which the dog curls himself up and will not be aroused by any disturbance, not even by punishment, pays no attention to food or drink, and thus remains until he dies.

Fear of water forms no part of the disease in the dog or in any other animal but man. Dogs, instead of exhibiting any dread of water, will drink eagerly of it. Other popular errors in connection with this subject are, the notion that a mad dog is afraid of mirrors or polished surfaces; that he will not eat; that they always froth at the mouth and carry their tails drooping between their legs. It would be exceedingly dangerous, to conclude that a sick dog was not mad, because he drank water, ate his food, carried his tail on his back and did not froth at the mouth. Equally erroneous, though not equally dangerous, would be the opposite conclusion, namely, that because a dog refused food and water, frothed at the mouth and drooped his tail, he must be mad. I saw recently, in one of our home dailies, an account of a dog belonging to a livery man of this city, having been destroyed because a prominent veterinarian pronounced him mad. It appears that the dog exhibited signs of sickness and his owner called the veterinarian, who ordered food to be offered to his patient. It was refused. He then ordered water to be offered him. The dog not only refused it, but actually ran away from it, whereupon the veterinarian at once pronounced him to be undoubtedly most mad, so ordered him shot, which was done. The idea that dogs froth at the mouth is a myth, except in the stage where the lower jaw becomes paralyzed and control is lost of the salivary glands.

There is but one known cause of rabies, namely, infection. It is no longer believed that it can arise spontaneously. It is peculiar to no country, sex, clime or season. The idea so prevalent that dogs are more likely to go mad during the dog days is a myth.

The infection of rabies is undoubtedly contained in the saliva. The reason the bite is more virulent in the so-called dog days is that the light garments of summer are easily torn and the saliva is not wiped off the teeth, as when the dog bites through heavy garments. Whether it is also contained in the blood has not been satisfactorily proven. Pasteur and others have abundantly demonstrated that the infection is contained in brain matter.

Not all the animals bitten by other rabid animals contract rabies, and not all men who are so bitten contract hydrophobia. In man, as near as can be determined, about one-half of those bitten by mad dogs or other rabid animals escape the disease altogether.

The history of one of the two cases of hydrophobia witnessed by me would seem to show that the period of incubation may be as long as four years. The average time is probably from three to five months.

So far I have confined myself mainly to a consideration of the subject assigned me, viz: rabies. I shall now take the liberty of saying something in regard to a subject which was not assigned to me, namely, hydrophobia.

Symptoms of rabies and hydrophobia differ widely. In the former delirium with hallucination is a marked symptom; in the latter, delirium is the exception and not the rule. In the dog there is no fear of water, and no paroxysms are excited by it. In man this is the most prominent symptom.

There are two symptoms of hydrophobia which are highly characteristic. One is the respiratory spasm excited by attempts to swallow water, increasing until it resembles a convulsive action, and the other is the frantic efforts which the patient makes to clear his throat of some offending material, and the violent expulsion of mucus from the mouth. Both these symptoms were very marked in the case I saw in Ashley, in 1871. The subject was a young Englishman of about 25 years of age. During my visit he sat up in a chair, was rational and gave an intelligent history of his case. He showed upon one of his hands a scar where he had been bitten by a rabid dog four years previously. It had become somewhat red and painful previous to his attack and once or twice before during the four years the scar had become somewhat inflamed as did also the lymphatics of his arm and the glands in the axilla, but these had subsided again without causing general symptoms. His face was flushed, his countenance anxious, his pulse was rapid and weak. He appeared to suffer greatly from thirst, and at somewhat frequent intervals he asked for water. He watched the movements of the attendant who went to fetch it for him with a look of horror, and when it came in sight he began to respire spasmodically and violently, reached out with both hands to take the bowl in which it was brought to him, and dashing it to his lips, made frantic efforts to swallow it but only succeeded in pouring its contents over his face and front part of his body. He would then become quiet again, except that every now and again he would hawk and spit in the most frantic manner. I saw not the slightest sign of delirium or of a desire to bite or do any one an injury. This was in the evening. I had no idea that death was immediately pending. The next morning I reported the case to several physicians, and we were about to start out to see him when word came that he was dead. Whether anything was done to aid the disease in putting an end to his sufferings I do not know, but have always had a lurking suspicion that there was.

The other case I saw at Warrior Run, and was a child about six years old. The period of incubation in this case was short. He had been bitten on the nose by a sick dog, but the dog lived longer than the boy. I did not witness the paroxysms in this case. The messen-

ger and the attendants thought he had croup. I could see no signs of croup, but they said he had spells in which he made a noise like that of croup and was unable to swallow. I was not told that he had been bitten by a dog, and I confess that I did not recognize the disease during life. This case also terminated fatally, before I made a second visit. On enquiring more closely into his symptoms, and learning that he had been bitten by a dog I became fully convinced that he died of hydrophobia. Such is my experience with hydrophobia. After witnessing one case and that a typical one, and having had the very striking phenomena of the disease impressed upon my mind in a manner which can never be eradicated, I failed in my next case, to recognize the disease. As an excuse, I have to offer that the parents were of that class of people who expect a doctor to know everything by a sort of intuition, and never volunteer information, however important. They told me he had some sort of spells in which they thought he would smother or choke, and which they believed to be croup, but they did not tell me until after he died, that these spells were brought on by attempts to drink water. Had this been done doubtless I should have been able to make an ante-mortem diagnosis and thus save myself some mortification.

During the stage of incubation of this disease, there are usually no symptoms whatever. Often the prodromata are also omitted, the disease setting in suddenly with spasms of the pharynx and inability to swallow. Generally, however, these phenomena are preceded by some prickling and pain in the seat of the bite, by chillness, headache, malaise, nausea, gloomy forebodings, taciturnity and restlessness Sooner or later, however, the patient is taken with constrictive spasms of the pharynx and respiratory muscles, caused by an attempt to swallow water. The agony produced by this attack is very great, causing in many cases an avoidance of any subsequent attempt to drink, although suffering greatly from thirst. The attacks are excited by the mere sight of water, or the noise of water being poured from one vessel into another. There is during the spasm, a sighing or gasping respiration such as one makes who wades gradually into cold water. The facial muscles are contracted, the nostrils dilated, the face and eyes red and congested, producing a spectacle of the most intense agony.

The patient now hawks, spits out the viscid saliva on all sides. As in the dog, so in the man, hallucinations and delirium are sometimes present, but this is not so constant a symptom as in the lower animals. Under their influence he is sometimes impelled to acts of violence, and will use every means of defence even to biting his attendants. Sometimes the patient dies in a paroxysm, from suffocation or apoplexy. More commonly, however, he dies from exhaustion or paralysis.

There is very little to be said as to the treatment of this malady. It is doubtful if a case of true hydrophobia ever recovered. The greatest importance attaches to the question of prevention. Probably the most effectual means of prevention would be to kill all the dogs in the universe. It is thought that if every dog in the universe could be muzzled for the period of a year, the disease would become extinct. The question arises, What shall be done with a dog that has bitten a man, and it is suspected that he may be rabid? Kill him, I hear you say. No, he should not be killed, but, confined until it is certain that he either is or is not rabid. It is needless to say that the idea so prevalent, that a dog which has bitten a man, though he be not mad should be killed, lest at some future time he become so, and thus cause the man he has bitten to become mad also, is an absurdity. Any dog, however, that will bite a man, ought, on general principles, to be killed.

The treatment of the bite of a rabid dog, or other animal, should be of the most radical kind. Thorough cauterization or excision should be resorted to as promptly as possible, and even where the wound has healed, and it is known that the animal was rabid, this treatment should be resorted to, as there is some reason to believe that during the period of incubation the poison is confined to the cicatrix of the wound.

And this brings me to the consideration of Pasteur's method of inoculation with his "primary virus." It would be presumption in me to express any opinion as to the real value of Pasteur's method. The ability and scientific attainments of the man are undoubtedly very great. It has been urged against some of his methods in connection with this subject, that they smack somewhat of the methods of the charlatan. He is accused of trying to make money out of his discovery. Now this may all be true, and his conduct may be reprehensible to that extent, but I submit that that does not prove that his theory is not true.

What then, is Pasteur's theory?

In answer to this question I shall simply read to you, the account of his theory and method, as given by Dr. Billings on his return from Paris, after having accompanied the celebrated Newark children to Pasteur's laboratory.

After stating that the period of incubation of rabies varies from 30 days to two years, but that the average period is from three to five months, he says:

During this entire period of latency, a person can be saved by Pasteur's treatment; but the trouble is, this period is so very variable, that for safety we are obliged to seek the lowest limit, say thirty days, after which we can only place an uncertain and problematical reliance upon the same.

Pasteur has shown, however, that the period of incubation in artificial or induced rabies is but 14 *days.*

How?

Practical experience has led to the assumption that the especial seat of the virulent material in canine rabies was the saliva, but from his observations upon many animals, Pasteur has concluded that the phenomena indicate the great nervous centres to be even more the seat of such causal substance, or elements, than the saliva, and numerous experiments have shown this to be the case.

Acting upon this hypothesis, Pasteur took some of the brain of a rabid dog, and boring a small hole with an appropriate instrument in the skull of a healthy one, and removing the piece cut out, he placed this rabid brain in contact with the healthy one. The result was, *the second or inoculated dog died in 14 days.*

He then tried the same experiment on a rabbit—that is, inoculated the brain substance from a rabid dog into the brain of a healthy rabbit. *Rabies again developed in fourteen days.*

Hence, *inoculated canine rabies, when the brain itself is the seat of inoculation, has a period of incubation of fourteen days, while accidental canine rabies has a most uncertain period.*

Knowing this, and knowing the impossibility of any experimentation upon human beings, it is not singular that Pasteur's attention should next be directed to the observation of similar inoculation into the brains of man's nearest relative, the monkey.

This being tried, a most singular phenomenon resulted. The inoculations were not followed by fatal results. *Rabies did not develop in its characteristic phenomena.* Here was a point which experience in the preparation of other forms of virus had shown might be of practical value.

The next step was to carry such inoculation from a rabid dog's brain through a series of monkeys, *i. e.*, after inoculating the first monkey from the dog's brain, nothing but monkeys' brains were used to inoculate the fresh ones.

What resulted?

*The virus lost all activity, even when again inoculated upon dogs or rabbits.*

Here was a quandary indeed.

Pasteur had discussed a means of mitigating his rabid material, *i.e.*, of supplying himself with what he calls a "primary vaccine." But, also, the supply of monkeys in all Europe would not answer his demands, so he had to give that up, leaving the fortunate monkeys that had been through the ordeal to be laughing and chattering witnesses of the innate toughness of their moral character.

What to do next was the question.

Try the same thing on rabbits, *i. e.*, carry the inoculations from rabbit to rabbit for a long time.

What resulted?

Just contrary to what occured in the monkeys. The virus or brain substance containing it increased in its activity until after it had been passed through some 25 rabbits, it was capable of killing rabbit after rabbit in about seven days.

Here was a new fact.

*Reducing canine to rabbit rabies in the above manner produces a disease capable of killing rabbits or dogs when inoculated upon the brain, in seven days.*

What next?

Here was a "secondary vaccine" with a vengeance. The next thing was how to get at a weak or primary one.

It was determined to try the effects of temperature upon nervous material, the spinal cord being used because it is more convenient to handle for this purpose than brain substance.

Hence, pieces of spinal cord were taken and put into tightly-closing glass jars, in the bottom of which was placed some pieces of dry caustic potash to absorb the moisture. The pieces of cord were suspended by a thread from the bottom of the cork A large number of jars were prepared in this way, the cord in each being from a different animal. These jars were placed, some in a cold place, others in a room kept at 20° C. Inoculations made with material taken from these jars showed that cold tended to retain the virulency of the cords, while those that were subjected to the influence of heat gradually lost their virulency.

Then followed a new experience.

If a series of these rabid cords from a large number of rabbits were treated as above, and subjected to the action of a warm dry air, and used as material for inoculation, it was found that no matter what number of cords were taken, each piece representing one rabbit, *that for each cord of a given dog's treatment, they each had the same action, i e.*, cords that had been treated 14 days had no action, those that had been treated 12 days had more, those 10 more still, and so on until we arrive at a one day cord, which would invariably cause rabbit rabies in 7 days. It was but natural that the next step should be the inoculation of a number of dogs with this whole series of cords, beginning with material made from a 14-day cord, and going up in virulency to a one-day cord, day by day.

The reader can better picture the frame of Pasteur's mind than I can for him, when he found that his one-day-old or fresh cords were unable to produce rabies in his dogs or rabbits that had been so treated, while the same material, if introduced into the brain of an untreated dog or rabbit, caused rabies to appear as usual in seven days.

Then came the crucial test.

Twenty-five dogs were treated in the above systematic manner, and after time had elapsed to allow for any disturbances from the same to follow, *these twenty-five dogs* were placed where they were all bitten by known rabid dogs.

What followed?

Nothing

Twenty-five other dogs that had not been so treated, but were as any dogs, were also allowed to be bitten by the same rabid dogs.

What followed?

*Rabies in every one of them!*

The same treatment has been applied to human beings, and was given to the Newark boys. The virus with which they were inoculated the last three days of their stay in Paris, would cause any dog to go mad within seven to nine days, but has not been followed by any evil effect in the children.

If these four boys were indeed bitten by a rabid dog, which time may prove, *they are saved from hydrophobia as sure as they are now living.*

# RECTAL ALIMENTATION.

READ BEFORE THE SOCIETY, DECEMBER 1, 1886.

*Mr. President and Gentlemen of the Luzerne County Medical Society:*

When, at a previous meeting, the Executive Committee of this Society reported the above subject for discussion at this meeting, and designated me for the essayist, I made a request of the Society to so extend the subject as to include the consideration of artificial or forced feeding generally. But when I came to prepare this paper I found the subject embraced too much to be properly treated in a single essay, and I have, therefore, confined myself to the subject originally proposed by your Executive Committee, to wit, "Rectal Alimentation." I shall be pleased at some future meeting of the Society to discuss the subject of Gavage in some acute as well as chronic diseases, and thus supply the omission in this paper.

In his preparation of this paper, your essayist has been surprised to find how meagre is the literature of the subject as contained in our standard works on Practice of Medicine. Thus, in "Pepper's System of Medicine," a voluminous work embracing about 7,500 pages, and being perhaps the latest contribution to the science, there is but one page devoted to the subject under consideration, "Quain's Dictionary of Medicine" does not allude to the subject, Trousseau does not refer to it, and no mention of it is contained in "Reynolds' System of Medicine," which is, as you all know, a very comprehensive treatise. In no edition of "Flint's Practice of Medicine" is any reference to rectal alimentation contained. In his "Clinical Medicine," of the edition of 1879, his omissions in previous works and editions are supplied, by a brief, though suggestive discussion of the subject under consideration. In "Wood's Library of Standard Medical Authors," comprising eighty-four volumes, only one allusion to the subject is made; though it is only fair to add that the discussion there contained is the most interesting and scientific one which I have found recorded in text-books.

Thus, it will be seen, my subject is one the proper discussion and investigation of which requires much time, labor and research. The Society will therefore excuse me, I know, if, on account of the exacting and unusual professional obligations of the last few weeks I have not met their expectations as respects the development of the subject assigned to me.

The idea of sustaining life by means of rectal alimentation, notwithstanding what I have already said as to the literature of the subject, is by no means a new one. For some time it has been well understood that nutritive elements introduced into the body per rectum were capable of sustaining life for quite an extended period, or, as Flint puts it, *indefinitely*, even when unaided by the ordinary methods of ingestion. It is, however, a matter of doubt whether a knowledge of this fact has been made as useful in the field of therapeutics as might have been expected from a method so potential, so simple, and withal, so certain in its action.

If I shall succeed in so presenting the subject as to widen its field of usefulness among the members of this Society, I shall feel that I have been well repaid for my effort. Two causes have operated to narrow the field of usefulness of rectal alimentation, viz.: first, a lack of proper confidence in the measure on the part of the profession; and second, a prejudice against it on the part of the laity. The first obstruction removed, the second will vanish as a consequence.

In my own mind no skepticism exists, concerning the efficiency of alimentation by the rectum; for I had the happy experience a few years ago of saving a useful life, wholly by means of aliment thus administered, when every other measure had failed and when death seemed imminent,—indeed inevitable. The case is also one of the most remarkable on record, as to the length of time alimentation was maintained wholly by the rectum; and, further, on account of the great emaciation and prostration of the patient when recourse was had to the measure. I shall therefore take the liberty to cite it at some length as the case best illustrating what clinical experience of the method I possess.

On November 25th, 1878, I was summoned to see Mrs. E., *aet.* 24. I found her suffering intense pain in the episgastrium. There was circumscribed tenderness over the stomach, and vomiting occurred frequently. In fact, whenever anything, however bland, was taken into the stomach it produced painful emesis. Morphia was administered for the pain, and for the vomiting, bismuth, chloral, manganese, ipecac, mercury, apomorphia, hydrocyanic acid, creasote, and in fact, everything else known to me as useful in an irritable condition of the stomach, were tried in vain. The vomiting and pain steadily grew worse. Several medical friends were called to counsel with me over the case. The suggestions made by them were carefully carried out, but still the vomiting continued, accompanied, now, by copious hemorrhage. At last, after several weeks of fruitless effort to administer the blandest aliment by the mouth, and after the patient was reduced by hemorrhage, pain and inanition to a pitiable condition I began (about January 1st, 1879,) an effort to sustain life by aliment introduced solely by the rectum. To my surprise and

satisfaction I found the injections retained, and the thirst, which had been extreme, began to abate. I forbade the administration of even the smallest quantity of water or other fluid by the mouth, for it invariably caused vomiting, thus teasing and worrying an already inflamed surface.

For several weeks everything went along nicely. My patient seemed to improve slightly as to flesh. About every six hours one egg beaten in six ounces of milk, with a tablespoonful of brandy, was administered. The rectum then became irritable and the brandy was discontinued and Tr. opii was substituted for it. Thus we alternated, and when once or twice the bowels became too irritable to retain the enema, entire rest was given to them as well as to the stomach. During this enforced period of rest to the rectum sole reliance was had upon the vicarious action of the skin. The body was thoroughly anointed with cod-liver oil, which was rapidly absorbed, so that large quantities of it were used in this way during the treatment. In the meanwhile, though emaciation had perhaps increased, marked improvement occurred in the stomach, there being much less pain and tenderness. The oil was continued when rectal alimentation was resumed, though with less regularity and in diminished quantity.

After the short period of rest my patient used to complain of the *taste* of the aliment administered, but I paid little attention to the complaint, believing it to be purely imaginative. This complaint usually occurred at periods varying from half an hour to an hour after the injection had been administered.

It is needless to say that I then had quite a different theory of the *rationale* of rectal nutrition than that which I now entertain, and which I shall announce in this paper.

This process was kept up continuously (with the one or two slight intermissions already mentioned) for a period of eleven weeks, during which time no aliment passed the lips of my patient. I then cautiously began the administration of bland aliments by the mouth, and found them retained by the stomach. (I need hardly say that event marked an epoch in the history of that family!) The amount was cautiously increased from day to day, with steady improvement both in the flesh and the spirits of my patient.

In just six months from the date of my first visit to the case reported I had the pleasure of seeing my patient in her kitchen, caring for her children, who but for this long sustained effort of rectal alimentation, I am certain would have been left motherless.

This sentence sounds, perhaps, more sentimental than cientific; but the vivid scenes and touching episodes of the sick chamber, especially in a long hand to hand struggle with grim death, will rise up before one, though after the lapse of years, and affect his meditations even

whilst trying to treat a purely scientific subject in a scientific manner.

In this connection I wish to express my regret of the circumstance of having mislaid the notes of the case reported, so that I have had to speak in general terms as to dates, etc. The length of time the treatment was pursued is, however, absolute.

The aliment used in this case was mostly milk, eggs and brandy; but beef-tea and meat broths were also administered. Desiccated and defibrinated blood had not then been brought to the notice of the profession as an article of food, and the importance of artificially digesting the pabulum used had not then been so generally insisted upon.. I therefore paid little attention to changing the albumen into albuminose, so as to meet the theoretical objection urged by those who hold that albumen is not diffusible, or if so at all, only very slowly and in very small quantity, and in order to be absorbed it must first be changed from albumen into *albuminose.* If that theory is correct then I am driven to another as to how my patient was nourished. This I will again revert to when I come to speak of the *rationale* of rectal alimentation.

Having by this case shown the possibility of long continued alimentation per rectum, and having also long ago convinced myself of the folly of attempting, at times, to introduce even the smallest possible quantity of food into a stomach which tosses back everything as soon as ingested, I need, personally, no demonstration of the truth of rectal nutrition, nor of the necessity of *absolute rest* to the stomach under circumstances such as I have described. I shall therefore treat the subject under the following topics:

1, Stomachic Rest.
2. The *methods* of Rectal Alimentation.
3, The *rationale* or *modus operandi* of the process.

FIRST, STOMACHIC REST.

My experience in the case cited, as well as more recent experience and observation, convinces me that the most essential factor in the employment of rectal feeding, especially in the severer forms of stomachic disability, is absolute stomachal rest.

But, unfortunately, it is easier to enjoin rest than to compel it. In the very outset of such an attempt, the physician is often met with a stubborn opposition from both the patient and his friends. The first duty of the attendant is to silence opposition by a clear explanation of the case in all its bearings, and then to be firm and unyielding in his treatment of it, notwithstanding the complaints of the patient, or the rebellion of his friends who may regard the proposition as a stern and cruel mandate.

The patient, tortured by the constant pain and vomiting incident to a diseased and irritated stomach, will be the easiest to manage.

Too often, the physician, through sympathy for his patient, or through cowardice in opposing his friends, will be led into allowing a *small quantity* of food to be given by the mouth, admitting that enough will be retained to do a *little good* Nothing could be more irrational and hurtful than thus to tease an irritated and inflamed stomach; and what would be more natural than to expect harm to ensue from such irritation?

Cases certainly do occur now and then, like the one cited, in which not the smallest quantity of aliment, however bland, can be retained by the stomach, and it certainly requires little argument to prove that such a condition would be aggravated by the gastric ingestion of any substance whatever. Would it not be far better to rest the stomach until the lesion shall have been sufficiently repaired to warrant the belief that the assimilative processes have at least been partially restored?

Leube, in speaking of chronic gastritis, says: "After the diseased gastric mucous membrane has been, as it were, prepared for recovery by one of the methods just mentioned, the most important indication is to preserve it from all irritation which might interfere with the cure. This indication is only perfectly fulfilled when, for a considerable time, *absolutely no food* at all is received into the stomach; for even the blandest nourishment excites the activity of the affected mucous membrane, and in this way may disturb the healing process. In severe cases, therefore, it is always desirable to prevent entirely the reception of food by the mouth, and to nourish the patient for some time entirely by the rectum."[1]

Several writers have recently called attention to the importance of absolute rest of the stomach in cancer of the stomach, ulcer of the stomach, acute gastritis, and in gravid nausea and vomiting. Dr. Campbell,[2] of Georgia, has invited the attention of the profession to the importance of stomachal rest in the last mentioned condition.

I might multiply the opinions of eminent writers all going to show the importance of prolonged rest to the stomach in certain diseased conditions of that organ, but the proposition is so plain that it seems unnecessary to further fortify it.

SECOND, THE METHODS OF RECTAL ALIMENTATION.

In the first place, of what should the food used in rectal alimentation consist? It should possess two important qualities: concentration and fluidity. The most important articles are milk, eggs, beef-essence, brandy and whisky, beef-peptonoids, meat broths, etc. In addition to these, mashed beef has been suggested by Dr. Boze-

(1) Vol. viii., p. 184, Ziemssen's Cyclopedia.
(2) Am. Journal Obstet. 7th January, 1880.

man, of New York,[1] and desiccated blood by Dr. Stewart,[2] of the same city. Defibrinated blood has been recommended by Dr. A. H. Smith[3] and it has been highly spoken of by several physicians who have used it. There is no doubt that both defibrinated and desiccated blood present a highly nourishing food, in a form which ought to be easily assimilated, but there is to my mind a strong objection to them which must to a great degree lessen their field of usefulness. I refer to the repugnance most persons have to the sight of blood, and the mental impression its use could not but engender.

Brown-Squard and Peasley each have a pancreatic preparation the formula of which is too long to give here, but which I should be inclined to follow should I again have a case requiring long continued alimentation by the rectum.

The favorite injection of Dr. Flint was as follows: Milk two ounces, whisky half an ounce, and the half of one egg. This to be given every three hours.

Catillon[4] has performed certain experiments on the dog going to show the impossibility of long continued alimentation by the rectum unless the food is first artificially digested. He fed two dogs for two months on injections of eggs. The first had eggs only and lived with difficulty and considerable loss of weight.

The second one was fed with glycerine and pepsin mixed with the eggs, and lived in an apparently normal condition, the weight and temperature remaining constant. After thirty-seven days the pepsin was stopped, when the animal began to lose weight and the temperature fell 3 degrees F.

The conclusion to be drawn from this experiment is plain, at least so far as dogs are concerned, and that is that the food must first be transformed into peptones before its introduction into the rectum. This is, however, at conflict with certain clinical facts, but it certainly suggests the importance, if it has not demonstrated the necessity, of associating the digestive ferments with the food before it is used as rectal aliment.

When alimentation is maintained wholly by the rectum a glass full of water should be injected two or three times a day to allay the thirst, which is apt to be troublesome if this precaution is not taken.

Prof. Velpeau, like Catillon, believes that to get the full nutritive benefit of injected foods they must first be transformed into peptones. He used for each enema, peptones of meat, 1½ oz.; water, 3½ oz.; laudanum, a few drops, and sod. bicarb., 4½ grs.

Meckle uses the following: "A pint of milk with one-fourth of a pint of water is carefully heated to 140 degrees F. Two drachms of

(1) Med. Record, July and August, 1879.
(2) Med. Record, January 3, 1880, p. 11.
(3) Archives of Med., vol. i., p. 113.
(4) Ab. in Brit. Med. Jour., September 18th, 1880, p. 485.

liq. pancreaticus and 20 grs. of sod. bicarb. in solution in one or two ounces of water are added. The whole is kept at a temperature of about 140 degrees F. for about an hour, and then thoroughly boiled for about three minutes. Thus prepared the food can be kept for a day. Leube, Rennie, Catillon, Dobel and Henninger prefer peptonized meats prepared according to the respective plan recommended by each of them; but to my mind, peptonized milk is preferable, as it is *par excellence* the most nutritious and easily assimilated of diets.

In some cases daily aperient clysters will need to be administered before injecting the aliment, where milk is used. This is caused by the non-digestion of the cæsine, whereby impaction of the bowel is liable to occur. This will hardly be experienced where digestive ferments are used with the food. In these cases I should be inclined to try Fairchild's peptogenic milk powder, an article of food which from a theoretical consideration would seem to be indicated.

Such medical treatment as may seem to be called for in the way of anodynes, tonics, etc., should be given per rectum with the food, until the stomach is prepared by absolute rest to resume its function.

Much care and good judgment need to be used in attempts to resume stomachal alimentation, as well as in the use of remedies by the mouth. A too hasty resumption of the natural mode of alimentation, or an indiscreet or premature use of drugs may undo all that has been gained by stomachal rest, or even produce irreparable mischief to the stomach.

In concluding this topic of my paper I wish to emphasize by repetition the importance of *absolute rest to the stomach* in most cases where rectal alimentation is called for. This rest should be maintained until the stomach has had ample time for repair, and is easily able to resume its function.

There is yet, however, one consideration connected with this topic of which I must speak before passing. Sometimes difficulty is experienced by the rectum in retaining the enemata. Where this occurs and is not easily controlled by the addition of a few drops of laudanum I would recommend that a Wale's rectum bougie be employed, and that it be carried to or beyond the sigmoid flexure. The syringe nozzle being inserted into the bougie the aliment can be thrown so high up that there can be but little doubt of its retention. They are, as you see, perfect rectal feeding tubes. Being soft, flexible, and tunneled longitudinally, the food is readily propelled through them.

THIRD, THE RATIONALE OR MODUS OPERANDI OF RECTAL ALIMENTATION.

The efficiency of rectal feeding in disease having been clearly demonstrated by clinical experience, the theoretical question as to

the rationale or modus operandi of the process becomes an interesting and important one.

This question has engaged the attention of physiologists for some time, and various theories have been held by them as to what becomes of the aliment when introduced into the rectum for the purposes of nutrition.

The fact that proper food, timely and wisely introduced into the rectum, does somehow or another furnish nutrition to the body is now beyond dispute. Yet, as I have already remarked there undoubtedly still exists a want of proper confidence in the measure on the part of the profession at large. If, therefore, the *modus operandi* of rectal feeding in accomplishing nutrition to the body can be assuredly determined, a greater confidence in the method will be produced, and its field of usefulness greatly extended. While physiologists are theorizing and experimenting, clinical experience is multiplying until it is more than likely that if the answer to the question does not come through that avenue, it will at least so light up the subject that the theories of the physiologist will become centralized and fixed.

Leube, whom I have already quoted, claims that owing to the well-established fact that both the colon and the rectum are comparatively deficient in lacteal vessels, and the further fact that they do not secrete the necessary fluids and ferments for the disintegration, solution and chylification of the alimentary matters so requisite to prepare them for absorption into, and final admixture with the blood, therefore rectal nutrition is impossible, unless the food has been first digested artificially. Hence, like those already quoted, he denies rectal digestion.

Other writers, being unable to dispute the clinical evidence of nutrition afforded by means of rectal aliments, allude to the subject as mere *absorption* of nutritious aliment.

In the brief discussion of the subject in Pepper's System of Medicine, the "lower bowel" is spoken of as an absorbent surface for alimentary substances. No allusion is made to the possibility of true digestion taking place when aliment is administered by the rectum. And yet, strange to record, nothing is said as to the importance of artificially digesting the aliment, a procedure insisted upon by those who hold the view that food cannot be digested in the rectum.

As to the ability of the mucous membrane of the rectum to *absorb* many substances there can be no two opinions. This fact has been abundantly proven both by experiments and by clinical experience. Even without such proof, the close anatomical resemblance between the inverted follicles of the rectum and the intestinal villi render an analogy in function extremely probable.

Liebig[1] has shown that an injected solution of salt, in the proportion of one part to eighty of water, will disappear entirely in an hour. The fluid extract of rhubarb may be detected in the urine in about an hour after being injected into the rectum, by the characteristic red color produced by the addition of caustic potash. Several medicinal substances are known to be absorbed more quickly by the rectum than by the stomach. Recently, M. L. Bergeon[2] read before the Paris Academy of Sciences, a paper on gaseous medication per rectum, in Pulmonary Tuberculosis He claims that after injecting certain sulphurous mineral waters per rectum "the cough was notably diminished and almost suppressed, the expectoration greatly modified in quality and in quantity, the sweating stopped, and the general state improved. Daily auscultations established the disappearance of moist rales." Here we have one of the best proofs of rectal absorption.[3]

The fact of absorption being admitted, the only question to be determined is the power of digestion before absorption. Upon this point we have three distinct theories to present.

Dr. C. H. Stowell[4] has advanced the theory that the follicles of lieberkuhn may take on a vicarious action, and secrete a digestive fluid under the stimulus of albuminous food. The great and lamented Flint at one time held to this theory, but later he[5] advanced the theory that "food introduced into the rectum excites secretion in the follicles of the stomach and intestines, and in the absence of food in the stomach, the digestive fluids thus secreted pass down into the rectum, and there act upon the injected material."

But what I regard as the most plausible theory is that of Dr. H. T. Campbell,[6] of Georgia. He holds that instead of the intestinal juices being invited downward to the rectum there to perform their mission in digesting the food placed in that organ, the *food ascends* by intestinal inhaustion, or retrostaslis to mingle with the digestive fluids poured out by the stomach and intestine.

This theory is based upon certain undisputed facts which have lately come to light respecting the reversed peristaltic action of the bowel.

Injected fluids such as milk and blood have been found post mortem evenly distributed over the intestinal tract beyond the rectum

(1) Liebig Animal Chemistry.

(2) Am. Med. Digest, November, 1886, p. 172.

(3) Since writing the above the subject has been widely discussed in the Medical Journals of this and foreign countries, and as the result of many experiments by prominent American and English physicians, it now appears that many of the claims of Dr. Bergeon as to the marked therapeutic effects of gaseous injections are being verified.

(4) Med. Advance, January, 1879.

(5) Am. Practitioner, 1878.

(6) *Loc. Cit.* (Trans. Gynaecological Soc., 1879.)

and colon. Dr. Battey, of Georgia, in an article entitled: "Permeability of the entire alimentary canal by enema,"[1] details experiments of his own by which he succeeded upon the cadaver in passing an injection from the rectum through the entire alimentary canal and out of the mouth. He also gives a few instances in which what has been accomplished on the dead subject, has also been done by nature on the living patient.

He in this way accounts for the fact that patients fed entirely by the rectum often are able to taste the articles injected, as, for instance cod-liver oil. Dr. Battey in this paper lays claim to priority in having established the "entire permeability of the canal to enema" But, unfortunately, like most discoverers, he had been anticipated, and in his case by so long a period of time as to prevent any unseemly disputes as to who was the original discoverer. A. Guaynerius[2] reported a case in which suppositories placed in the rectum were speedily vomited. This case was reported so long ago as the year 1534. But it appears that even he was preceded by another observer—I. Matthias de Gradibus,[3] who in the year 1502 reported the case of a girl "who constantly vomited her suppositories even after they had been tied with a string to keep them in the rectum."

While Dr. Battey has failed to establish his claim to priority in proving the permeability of the entire alimentary canal, he has done much to awaken interest in a subject which comes to our aid in explaining the rationale of rectal nutrition.

More recently Dr. Harris, of Georgia, has reported a case in which clear beef-tea, enemata were vomited after an operation for ovariotomy.

Jaccoud reports a case of an hysterical patient in one of the Paris Hospitals, "who for eight days, at least once a day, vomited veritable fæces, dense, solid, cylindrical, of a brown color, and with the normal fecal odor, coming evidently from the large intestine." This case is corroborated by Dieulafoy who witnessed the act, and who characterized it as defecation by the mouth.

In the intervals of the convulsions the patient was well and ate heartily. The patient afterward died of typhoid fever, and an autopsy revealed no mechanical obstruction whatever in the alimentary canal. The ileo-cæcal valve was normal.[4]

Routh[5] bears testimony to the retrostaltic action of the intestinal canal in these words:

"Even cod-liver oil may be absorbed if given by the rectum. Persons who have so taken it have complained to me of feeling the taste of it in their mouths for hours after."

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(1) Virginia Med. Record, Vol. v., 1879.
(2) Med. and Surg. Hist. of the Rebellion, Med. Vol. ii., p. 836.
(3) *Loc. Cit.* (Med. Hist. of Rebellion, Vol. ii., p. 836.)
(4) See Kelsey on diseases of the rectum, p. 284.
(5) "Infant Feeding," Wood's Library, p. 234.

Under certain conditions of irritation or morbid disturbance, retrostalsis of *sections* of the alimentary canal frequently occurs.

Vomiting, regurgitation, rumination, gagging, the ascent of bile into the stomach, and of the fæces to or beyond the sigmoid flexure, under the restraint produced by the sphincter muscles, are all illustrations of sectional inhaustion, or reverse peristalsis.

Dr. Campbell,[1] in speaking of these familiar examples of sectional reverse peristalsis, says: "We have seen then that every section of the intestinal canal is at times subject to inhaust, or receive from below the contents of the section continuous with it. That which is so familiarly and demonstrably true, as pertaining to one and all of the parts of the alimentary canal, may certainly under similiar circumstances be predicated as pertaining to the whole. Then this upward movement, continuously maintained from the rectum to the small intestine, is what I would designate as the intestinal inhaustion subservient to rectal alimentation."

Senneritus[2] cites a case, in which a tallow candle used as a suppository was vomited shortly after its introduction, in order to prove that ileus is not due to obstruction, but to a reversal of the normal peristaltic action of the intestine.

Dr. Potter,[3] of Batavia, N. Y., in a paper read before the New York State Medical Society, February, 1880, uses this language:

"I have taken some pains to study the phenomena clinically which have occurred in my own cases during the process of rectal feeding, through a careful questioning of the patients, and likewise by observations made in person at the time of rectal ingestion. Soon after the aliments are injected a gurgling sound may generally be heard, and some intestinal commotion may also be observed. Moreover, the patients themselves, when questioned upon the point, have invariably informed me that they can 'feel the injection going upwards in the bowels while rumbling is going on.' After the cessation of the commotion they have experienced no fear of the loss of the clysters. In some instances they have complained of tasting the aliments not long after their injection."

I regard the above remarks as strongly confirmatory of a reverse peristaltic action of the intestinal tract in these cases. My own experience is in accord with what Dr. Potter has said on the subject.

Dr. Potter[4] claims that experimental research on the lower animals goes to support the view that intestinal inhaustion occurs when aliments are placed in the rectum; but I am not able to refer to the report of any such experiments. If, however, this fact can be fully demonstrated by experiment on the lower animals, then all doubt as

(1) *Loc. Cit.* (quoted by Dr. W. W. Potter in Med. Rec., Vol. xvii.)
(2) Med. Record, Vol. xvi., p. 395.
(3) Loc. Cit.
(4) Loc. Cit.

to the rationale of rectal alimentation will be cleared away, and it will at once take rank as one of the leading therapeutical measures in all diseases of the stomach, whether of an organic or functional nature, in which the ingestion of food acts as an irritant to that viscus.

CONCLUSIONS.

As the result of a limited clinical experience, and such a study of the literature of the subject as my time and facilities would permit, I have arrived at the following conclusions, which, in closing this discussion, I desire briefly to record:

1, In the light of the abundant clinical evidence which has now accumulated, there can be no doubt that by the use of properly prepared enemata life can be supported indefinitely, with little if any loss of weight to the body.

2, That in a large proportion of cases in which rectal aliment is used, true digestion of albuminous, saccharine and fatty food takes place, by virtue of inhaustion, or a reversal of the normal peristalsis of the alimentary tract.

3. That while this is the case, there are doubtless instances in which retrostalsis does not occur, and for that reason the food used should first be artificially digested before being injected into the rectum.

4, That while milk, eggs and brandy, especially when prepared after the method of Mickle, are the best aliment for rectal nutrition, no one article should be used for too long a time, but frequent changes should be made, observing the greatest care to prevent irritation of the rectum, or intolerance of that organ for the nutriment required.

5, That the enemata should, if possible, be administered by the physician himself, and not entrusted to an incompetent nurse. Where difficulty in retaining the aliment is encountered, the colonic method is preferable, the food being propelled through a rectal bougie, such as I have described. The food should be of the temperature of the body, and should be passed through the tube two or three times in order to insure the proper temperature of the instrument.

6, The rectum having once become intolerant of enemata, *absolute rest* must be given to that viscus for a few days and reliance be placed in nutritious inunctions of the surface of the body.

7, That for rectal alimentation there exists a wider range of usefulness than has heretofore been assigned to it. That it is not only appropriate in the severer forms of chronic disease of the stomach and œsophagus, but is indicated and should be utilized in the management of all *acute* diseases when, from any cause, the stomach becomes intractable and rebellious.

8, That in diseases of the stomach, even where a portion of the food ingested is retained by that organ, only to undergo fermentation, inducing thereby pain and distress, it is more logical to resort to rectal alimentation, not as an *adjunct* to, but a *substitute* for, stomachal ingestion.

9, That for purposes of nutrition it is more natural to suppose that food sent up through a healthy avenue will contribute more to the nourishment of the body than when it "reaches the absorbent vessels through a diseased organ, whose juices are chemically altered, and all its functions rendered morbid by pre-existing reflex or organic maladies."

10, That certain organic lesions as well as functional disturbances of the stomach are curable by means of rest to that organ, and by no other means; and that in rectal alimentation we have a safe and sure means of nutrition, pending the necessary period of rest to that viscus.

# A CASE OF SUCCESSFUL REDUCTION OF DISLOCATION OF THE LAST DORSAL VERTEBRA.

By Dr. W. H. FAULDS, Luzerne, Pa.

I was called on the evening of the 16th day of February, 1885, to see Henry Johnson, inside foreman at Forty Fort colliery, and found him suffering from a dislocation of the last dorsal vertebra; the spine of the displaced vertebra projecting backwards about three-quarters of an inch. Upon inquiry I learned that the injured man while sitting upon the hoisting carriage a short distance down the shaft, with a cross-beam about two feet above his shoulders, the engineer without notice or warning hoisted the carriage to within a few inches of the cross-beam, thus bringing together the chest and thighs of the unfortunate man with power sufficient to force the vertebra from its position.

There was retention of urine and feces, with complete loss of sensation and motion below the knees; sensibility being so completely destroyed that the attendants, notwithstanding my precautions, produced severe burns of the soles of the feet by the application of hot irons without the knowledge of the patient. Motion and sensation above the knees were not entirely destroyed, there being slight sensibility of the skin and sufficient contractible force of the thigh muscles to barely shake the limb—not move it. Judging from these symptoms that the cord was not lacerated, notwithstanding its severe compression, I determined to attempt a reduction of the dislocated vertebra, and at 9 o'clock on the following day sent for Dr. Davis in consultation. The patient was etherized and reduction readily made by making extension and counter-extension, and at the same time drawing the body backwards, thus facilitating, as I believe, to a very great degree its reduction. This statement, perhaps, needs some explanation, and in order that I may make it clear I shall ask you to examine with me for a few moments the construction of the spinal column. You will see by examining this portion of the skeleton that the projections preventing a ready reduction of a dislocated vertebra are the vertical processes, and experience has proven that sufficient stretching of the spinal column to allow these processes to pass the contiguous vertebra is not an easy matter. Now in order that this difficulty might be the more easily overcome the thought occurred to me of flexing the spinal column upon itself by drawing the body backwards while extension and counter-extension were being made,

thus separating more widely the opposing surfaces, and, as I believe, greatly facilitating the reduction of this vertebra.

A pad three inches in thickness was placed over the seat of dislocation and retained in position by a binder passed around the body. He was then placed on his back and the legs held in an extended position for four days.

Almost as soon as he had recovered from the effects of the ether he felt the hot bricks when placed to his feet, and in six hours from the time reduction was accomplished he could tell which toe was touched.

He urinated after the seventh week without the use of the catheter. and has had a daily evacuation from the bowels without laxative or enemeta since the fifteenth week after injury. In the eight month he went on hands and knees from one room to another, and when sitting in a chair could raise his feet about six inches from the floor. By suspending the body from the shoulders in a framework made for that purpose, took several steps forward. The power of motion continued to improve until on February 14, 1886, one year from date of injury, he walked about his room on crutches.

Improvement since that time has been gradual and permanent. During the month of May last he superintended the digging of a cellar, walking over the loose earth with apparent ease. He also got in and out of his buggy without assistance and could walk on pavement a short distance with the aid of two canes.

He is present to-day, and unless embarrassed by your presence, will probably take several steps without the aid of cane or crutch.

The points of interest in this case seem to be the ease with which reduction was effected and the unexpected improvement which followed.

These, considered in connection with the fact that cases of dislocation of the vetebra are usually hopeless, and reduction rarely resorted to, will perhaps be sufficient apology for my having brought the case to your notice.

# A CASE OF FOREIGN BODY DRIVEN THROUGH THE TISSUE OF THE NOSE INTO THE ORBIT—RECOVERY.

By LEWIS H. TAYLOR, M. D., Wilkes-Barre, Pa.

On February 7, 1885, Mrs. P., of a neighboring town, brought to my office her boy aged twenty months, stating that while playing three weeks previously he had fallen forcibly forward upon the floor, striking his head upon a penholder which he held at the time in his hand. The mother states that the penholder ran upward into the left nostril, and there broke off. A physician removed it, securing three pieces, but the mother thought another piece remained, and as the child's left eye had been in very bad condition since the accident and was rapidly growing worse, she feared it also had been injured, and on this account consulted me.

Upon examination the tissues around the left eye were found greatly swollen, hardened, and painful, the eye apparently bulging forward, the lids tightly closed and almost immovable, and pus escaping from between them. Any attempt at opening the eye seemed to cause great pain. Finaley, by holding the head firmly between my knees, I succeeded, by aid of an elevator, in separating the lids to a slight extent, when, to my astonishment, there presented at the opening a black object, which I extracted and found to be the missing piece of penholder.

The piece was one and one-sixteenth inches long, one-eight of an inch in diameter at its smaller and three-sixteenths of an inch in diameter at its larger end. The penholder had been forced up the left nostril, a portion of it having passed through the tissues of the nose and into the orbit, where it had remained three weeks, causing intense pain and a high grade of inflammation. The child was unable to sleep, and seemed almost exhausted from its long siege of pain and worriment.

After removing the foreign body, I incised the swollen tissues freely, instilled atropia, and as the mother had been using a lotion of lead-water and laudanum, I continued this application. The cornea could not be seen at all at this visit, owing to the swelling of the surrounding tissue.

Feb. 9th.—The patient now seems bright and easy. Swelling has subsided considerably, and by forcing the lids apart the eye is seen beyond, apparently uninjured. Treatment continued.

Feb. 11th.—Swelling subsiding; cornea clear and Normal. Has prolapse of lachrymal gland.

Feb. 19th.—He now begins to keep the eye open voluntarily. Chemosis is rapidly disappearing. Eye looks clear and bright. Pupil dilated from atropia. No iritis. The atropia was now discontinued, and a weak solution of zinc sulphate and boracic acid used. From this time onward the improvement was rapid, ending in entire recovery and leaving no defect in either eye or nose.

The case has seemed interesting to me, and possibly worthy of record, owing to the severe nature of the wound, the lenght of time the foreign body was carried in the conjunctival sac, and the final complete recovery without impairment of vision.

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# TRANSACTIONS

OF

# LUZERNE COUNTY MEDICAL SOCIETY.

1891.

# Transactions of Luzerne County Medical Society.

JANUARY 7, 1891.

The annual meeting was held in the society rooms at 8 P. M. There were present: Drs. Guthrie, President; Gibson, Secretary; Fell, Murphy, Hutchins, Hakes, Clark, Barney, Weaver, Knapp, Rogers, Jones, D. T., Taylor, Hileman, Faulds, Stewart, Biehl, Davis, Barrett, Whitney, Matlack, Brundage, Carle, Gibbons, Johnson, Harvey; and visitors, Drs. Moore, Geist, Ruffner, Price, Meredith of Danville, Pa., Kunkel and Lathrop.

The minutes were read and approved.

The report of the Executive Committee was read and filed.

Proceeded to election of officers. The following list was placed in nomination by the Executive Committee:

President—Dr. W. H. Faulds, Luzerne.
First Vice President—Dr. J. I. Roe, Wilkes-Barre.
Second Vice President—Dr. D. Barney, Wilkes-Barre.
Secretary and Treasurer—Dr. Maris Gibson, Wilkes-Barre.
Editor—Dr. C. P. Knapp, Wyoming.
Executive Committee—Drs. Long, Fell, James, Matlack, Shoemaker.
Censor—Dr. L. H. Taylor, Wilkes-Barre.
Curator—Dr. A. G. Fell, Wilkes-Barre.

On motion Dr. Weaver was invited to cast the ballot of the Society for these gentlemen, as respectively named. This was done, and they were declared duly elected.

On motion it was voted that all stated meetings of this Society be held at 8 o'clock P. M.

The following report of the Treasurer was read and adopted, and Drs. Howell and Murphy were appointed auditors.

Account of Maris Gibson, Treasurer of Luzerne County Medical Society for the year ending January 7, 1891.

| | |
|---|---|
| Amount in Treasury and received for dues from members | $690.30 |
| Amount expended | 672.64 |
| Balance in treasury | $17.66 |

The application for membership of Dr. F. R. Lenahan was read and referred to the Censors.

Dr. H. Kunkel was elected to membership as recommended by the Executive Committee.

The following was, on motion, adopted: The Society shall adopt Roberts' Rules of order as governing all meetings, except when it may or might conflict with the By-Laws and Constitution of the Society, and that two copies of this book be purchased, one of which shall not be removed from the President's desk.

Arrangements for March meeting:

Essayist—Dr. D. W. Mears.

Leaders of Discussion—Drs. Rogers and Stewart. Subject, "Obstructive Dysmenarohea."

Henry E. Tucks bill of $13 for specimen jars was read and ordered to be paid.

The following, offered by Dr. Taylor, was unanimously adopted:

WHEREAS, Great laxity prevails in the care of such infectious diseases as scarlet fever and diphtheria, and gross carelessness in regard to public funerals of persons who have died of such diseases,

AND WHEREAS, A number of cases of scarlet fever and diphtheria are at present existing within the limits of our city, therefore,

*Resolved*, That the Luzerne County Medical Society earnestly recommend the Sanitary Committee of Council to present, and the City Council to adopt such an ordinance as will render it necessary for all physicians to report at once to the Sanitary Committee all cases of scarlet fever or diphtheria occurring in their practice, to make obligatory a quarantine

of the same, and to prohibit public funerals of bodies of persons who have died of these diseases.

The Secretary was directed to transmit a copy to the City Council. At this time the Society adjourned to the Wyoming Valley Hotel, and engaged in the following program :

## *MENU.*

Hûitres.
Tortue vert d'Orleans. Consomme, Sévigni.
Petits Bouchées, à la Parisienne.
Saumon de California à la Chambord.
Pommes, Duchesse.
Filet de Boeuf, Pique, à la Baden-Baden.
Haricots Verts.
Chapon, de Philadelphia, Braisè, à la Daube.
Terrapin, à la Maryland.
Sorbet, à la Régence.
Cailles, Rôti, au Demi-Glaze.
Laitures.
Glacé, à la Nesselrode. Cornets, à la Creme.
Gateaux Varies. Fruits. Fromage.
Café.

## *TOASTS.*

Address by Retiring President . . . . . Dr. G. W. Guthrie
"For your digestion's sake
An after dinner speech."—*Troilus and Cressida.*

The Didactics.
A Symposium.

1. Anatomy . . . . . Dr. J. S. Hileman
"Is this the poultice for my aching bones?"—*Romeo and Juliet.*
2. Physiology . . . . . Dr. Harris Jones
"The store and the shop of the whole body."—*Corilanus.*
3. Chemistry and Materia Medica . . . . . Dr. C. P. Knapp
"O! true apothecary!
Thy drugs are quick."—*Romeo and Juliet.*
4. Surgery . . . . . Dr. H. M. Neale
"Let me have surgeons:
I am cut to the brains!"—*King Lear.*
5. Practice . . . . . Dr. L. H. Taylor
"Preserving life in medicine potable."—*Henry IV.*
6. Obstetrics . . . . . Dr. G. W. Weaver
"Got 'tween sleep and wake."—*King Lear.*

The following resolution presented by Dr. Brundage, was unanimously adopted with a standing vote :

WHEREAS, We have learned with regret, of the death of the wife of our fellow member, Dr. W. R. Longshore,

*Resolved*, That we extend to him our most earnest sympathy and kindly feeling in this his hour of loss and bereavement, also that this resolution be placed on the minutes and a copy transmitted to Dr. Longshore.

This resolution, as stated, was adopted.

Dr. Rogers moved, and it was seconded by many, that we, the members of the Luzerne County Medical Society around our festive board, miss our genial friend Dr. I. E. Ross, and we extend to him our sincere sympathy in his tedious hours of suffering. Also that the Secretary send a copy of this resolution to him. Carried unanimously.

Drs. Hakes, Weaver, Crawford, Brundage and Taylor, expressed their esteem and warm personal regard for Dr. Ross, which but voiced the sentiment of the whole society, and after singing Auld Lang Syne, adjourned.

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MEETING OF JAN. 21, 1891.

After the transaction of the regular business, the following papers were read. Dr. W. H. Faulds, presiding.

"An Experimental Inquiry as to the Effects of a Pistol Shot at Short Range." W. H. Faulds, M. D., Luzerne, Pa.

"I want to show you the result of some experiments which were the outgrowth of the Broderick tragedy with which you are all familiar. These experiments were made in order to enable me to answer intelligently the question whether it was possible for Curley to commit suicide by shooting himself in the forehead without singeing the hair or eyebrows, or leaving powder marks on the skin.

The importance of answering this question correctly will be apparent when we recall the fact that the circumstances of the murder were such that if it could be proven by medical testimony that it was not possible for Curley to commit suicide by shooting, the ball entering the forehead where it did

—at the roots of the hair—without showing a burnt surface and leaving particles of powder embedded in the skin, then Trella must be held on circumstantial evidence for the murder of Curley.

On the other hand if medical testimony showed that it was possible for Curley to commit suicide without such evidence of his act, then Trella, in the absence of other testimony as to his guilt must be released.

The experiments were as follows : A piece of absorbent cotton was fastened to pasteboard and a revolver fired at it at different distances. At ten inches from the revolver the cotton was ignited ; at thirteen inches the cotton was blackened but not burned.

The inside of a tanned sheep-skin was then placed at a distance of ten inches from the revolver. A few powder marks were left on the surface of the skin, which were easily wiped away with a damp sponge. At a distance of thirteen inches no marks after sponging could be discovered.

At the suggestion of Dr. Knapp of Wyoming these experiments were repeated, fresh pig skin being used for the target. At ten inches the surface was blackened, but after washing with a sponge and cold water, only a few particles of powder were left embedded in the skin. At thirteen inches all trace of the powder marks was removed with the water and sponge. The pig skin was fresh and soft, and so far as we were able to judge more easily penetrated by the particles of powder than human skin would have been. A revolver of the same size and kind as that used by the suicide was employed in conducting these experiments.

The range of a suicide, when a revolver is used, is from sixteen to twenty inches. In the light of these facts and considering that blood flowed freely from the wound, and that the clotted blood remained on the forehead for several hours after the shooting, water and soap being then used for its removal, is it strange that all evidence of a self inflicted wound should have been wanting ?

These experiments would seem trifling and unnecessary were it not for the fact that Taylor in his work on Medical Jurisprudence in speaking of gunshot wounds produced by close contact, says : ' The edges of the aperture of entrance appear blackened as if they had been burned. The skin is much dis-

colored by the powder and the clothes are sometimes ignited by the flame.' Again : 'When a gun or pistol is discharged at a distance of three or four yards from the person, it will not of course produce those marks of blackening, burning and bruising on the skin which are found when the muzzle is within a few inches of the body. A wound which does not present these appearances may remove the suspicion of suicide and create a strong presumption of homicide. Dr. LaChèse found that in firing a gun at the distance of four feet the skin was only partially blackened.'

I observed too that popular opinion favored the view that it was impossible for Curley to commit suicide, the ball entering where it did without leaving powder marks, singeing the hair or burning the skin."

"A Case of Sarcoma of left Kidney, with specimen." Reported by W. G. Weaver, M. D., Wilkes-Barre.

"On May 6, 1890, Mr. A., aged 34 years, married, consulted me in my office for a lumbar pain. Supposing it to be of a rheumatic character I contented myself with prescribing an anodyne and anti-rheumatic mixture. He consulted me again in a few days reporting himself somewhat relieved. I again prescribed for him, but he returned again on May 17th still complaining of deep-seated lumbar pain extending down to the iliac crest. I then made a careful inspection and palpation of those regions. I discovered upon deep pressure a well-marked growth pressing forward to near the margin of the ribs on the left side of the body. The pain was considerably augmented by pressure. There was dulness on percussion over the region. There was no bulging posteriorly and not much pain was then experienced over the kidney. The pain was of a dragging, sometimes of a lancinating character, and extended forward and downward toward the crest of the ilium. The diagnosis was at this time very much in doubt, and again I prescribed for him requesting him to return again, which he did on the 21st of May. I found the tumor perceptibly enlarged, but the pain was much modified in severity. Examination of the urine revealed a normal condition. The diagnosis now lay between a malignant growth of the spleen or the kidney. There had been no hemorrhage and no elevation of temperature. There were also no rigors. Pain and

tumor were the important symptoms. Considerable loss of flesh had also taken place. Appetite was fair; sleep restless and broken. He continued under my care, coming to my office on an average once a week until July 3, 1890. During this period the tumor gradually continued to enlarge and the pain to increase. Emaciation and debility also increased, though the patient continued his usual occupation. About June 1st examination of urine revealed considerable albumen present. Normal in color and no hemorrhage. At this examination I diagnosed the case to be carcinoma of the kidney.

After July 1st the case fell into other hands, and he was seen by and prescribed for by three separate physicians in town. I have not a clear history of the case after July 3d, but learn he became rapidly weaker and more emaciated, and also dropsical. The dropsy, however, completely disappeared a few weeks before his death, which occurred September 14, 1890. The albumen also disappeared from the urine. There was at no time hemorrhage.

The day following his death I received permission to make a post mortem examination of the body, which in company with Drs. Davis, Stewart and Butler, I did. Upon opening the abdomen we found a large tumor filling up the entire left side of the abdomen, extending to a point represented by a line drawn from the crest of one ilium to that of the other. The normal relation of the organs was much disturbed and numerous adhesions were formed to the tumor. The transverse colon lay anterior to the tumor and was closely adherent to it. No idea of the organ involved could be arrived at from its size, shape, location or consistence. After considerable effort the attachments were broken up, and the organ lifted out of the abdomen. The spleen was found crowded high above, and in a normal condition. The right kidney also appeared to be normal. By elimination, and from its relation to the colon, we were able to determine that the organ invovled was the left kidney. It was in size larger than a man's head. The weight was not ascertained. It was very fragile. Upon section, the macroscopic appearance was that of encephaloid. No stone was found in the organ.

The microscopic examination was made by Drs. Taylor and Stewart, and they pronounced it to be a Sarcoma; but the slide exhibiting a mixed appearance, in part resembling a car-

cinoma, it was submitted by them to Dr. Formad, the eminent pathologist, who also pronounced it to be a Sarcoma.

The ground upon which the diagnosis of carcinoma of the kidney was based, was the character and location of the pain, the location of the tumor, the absence of fever and rigors, and the family history of the patient, a distinct cancerous history being found."

"Tuberculosis of the Kidney." Reported by W. H. Faulds, M. D., Luzerne, Pa.

"I have to present to you to-day pathological specimens taken from the body of a young man, age twenty-one years, who was injured on the tenth day of December, 1889, while playing at foot-ball, one of the students falling upon and striking him with his knee in the left lumbar region.

He was assisted from the campus and taken to his home in Luzerne where I was called to attend him. I found him suffering severe pain and the abdomen at the seat of injury very tender. There was no hematuria.

His temperature on the third day after the injury was 104°. In about one week the pain subsided, and in two weeks he resumed his studies at Wyoming Seminary, also his work there which was attending the furnaces which supply heat to the building. After five weeks of hard study and labor combined he consulted me for painful micturition, and one week later gave up his studies and returned home.

His symptoms then, aside from the vesical trouble, were those of nervous prostration. He was unable to read longer than five minutes at a time; he also slept most of the time and complained of pain in the left leg and some times in his arms. While he did not complain of pain or tenderness over the seat of injury he leaned forward and favored the injured side. This position gave rise to a suspicion of spinal disease, but subsequent developments failed to confirm this suspicion.

He rode out every day, was cheerful, never complained of pain or soreness, except on passing water. His mental condition improved, and, except that his general appearance was that of a consumptive, there was nothing to indicate serious disease. There was no cough, and an examination of the lungs failed to give any evidence of disease of those organs.

Three months after the injury his weight had decreased from 150 to 124 pounds. At this time, failing to make a diagnosis, I took him to Dr. Davis of this city who, after a careful examination, failed to locate the trouble, so we concluded to wait for further developments.

Five months after he was seen by Dr. Guthrie. There was then slight tenderness over the left kidney which the doctor thought was probably due to abscess of the kidney, or of the supra renal capsules. The abscess, however, failed to develop, though the tenderness over the left kidney gradually increased.

About six weeks after consultation with Dr. Davis, the general appearance of the patient and the slight tenderness over the kidney, made me think of tubercular disease of the kidney, but as every medical writer whose works I had thus far consulted only mentioned this disease as being associated with and secondary to tubercular disease of other organs, I readily assented to Dr. Guthrie's diagnosis of abscess.

Two weeks later, however, I found the case so nearly described by Dr. Dickinson, in his work on Renal and Urinary Affections, under the head of tubercular disease of the kidney, as to leave little doubt in my mind that this would prove to be a case of that disease.

Almost six months had now elapsed since the injury, still his general condition remained about the same as three months previous. He was in good spirits, walked or rode out every day, spent some of his time in preparing for class-day and commencement exercises in which he was anxious to participate, and in which he did take part two weeks later, delivering the farewell to his class. This he did notwithstanding he had a chill every afternoon followed by a temperature of from 103° to 105°.

The unfavorable prognosis given alarmed his friends, and they decided to send him to Bellevue Hospital, in New York City. Being anxious to confirm our diagnosis I again took him to Dr. Davis, and afterwards to Drs. Stewart, Murphy, Knapp and Rippard, all of whom agree that from the description given by Dickinson and the history of the case, we would be safe in venturing a diagnosis of tubercular disease of the kidney. Dr. Rippard made a miscroscopic examination of the urine June 21st and found blood corpuscles, granular casts, pus corpuscles, renal epithelium, and one waxy

cast; specific gravity of urine 1009, but only a trace of albumen.

June 23d, six and a half months from the date of injury, he went to Bellevue Hospital taking with him a letter giving our diagnosis of tubercular disease of the kidney and a brief history of his case.

June 24th I received a card from his father stating that he had been examined by a Dr. Pratt of the M. E. Hospital, Brooklyn, who thought he could be cured, and who was willing to take the responsibility of an operation.

I regret very much that a part of the correspondence has been lost, especially that relating to the opinions of Drs. Stewart and Janeway.

July 7th I received the following from the boy's father:

"BELLEVUE HOSPITAL, NEW YORK CITY.

*Dear Dr. Faulds:*

Time passes rapidly, still they are awaiting further developments. I think at last they will decide as you, that it is tubercular disease of the kidney, although they do not really seem any nearer to a diagnosis of the disease than the day I took him to the hospital. However, Dr. Stewart told me yesterday that he would wait until Wednesday, and then know something or nothing. A different physician examined him every day or two, and his case seems so obscure that if they give any decision, it seems to be a sort of guess at conclusion. I let them take their time, but have asked them several times if they did not desire to see your diagnosis. They say 'not yet.' They seem to want to form their own opinion, which I suppose is better.

Yours very truly, F. A. K."

July 14th was the day set for the operation, and I arrived in the operating room just as Dr. Bryant was cleansing and disinfecting his hands preparatory to operating. The father of the boy introduced me to Dr. Bryant, who, after greeting me kindly, said: "This has been a puzzling case to us. When the boy came here I thought he was suffering from pyaemia, but after using the aspirator at several points in the region of the kidney we failed to find any pus. We have decided to make an exploratory incision. We may find a tubercular, or perhaps a sarcomatous kidney."

The patient being ready the operation was done by making an incision six inches long in the left lumbar region, parallel with and three inches to the left of the median line. On reaching the peritoneum all bleeding vessels were tied with animal ligatures, and the wound thoroughly cleansed before cutting through that membrane.

The opening in the peritoneum was about three inches in length. Through this the kidney was examined with the fingers. Its outer surface was slightly nodular, and the kidney so firmly adherent to the surrounding tissues as to make it unsafe to attempt its removal. The wound in the peritoneum was first closed by a continuous suture, making a water-tight seam. The edges of the skin were then drawn neatly and closely together, and the antiseptic dressing applied.

Twenty-three physicians witnessed the operation. After the operation Dr. Bryant expressed himself as being still in doubt as to the nature of the trouble. After some hesitation he said: "The nodular surface of the kidney and the hematuria make me think it may be sarcomatous, but, if it is, then I am at a loss to know how to account for the high temperature. It may be tubercular, it may be sarcomatous, it may be both. In regard to the injury, there being no hematuria following the accident makes me think that the injury was in all probability not a factor in the case."

Two weeks after the operation the boy was brought home. One month before death a diarrhoea set in which could not be controlled by the ordinary remedies. His appetite and digestion remained good almost to the last. His mind in the last weeks of his illness weakened at times, but up to this time it seemed to retain its former vigor. He died from exhaustion.

September 16th a post mortem was held, the result of which the following letter to Dr. Bryant will explain:

"SEPTEMBER 22, 1890.

DR. BRYANT, BELLEVUE HOSPITAL, NEW YORK.

*Dear Doctor:* N. B. K., son of Rev. F. A. K., on whom you performed laparotomy, July 11th, and who was then thought to have tubercular disease of the kidney, died on the 16th inst. A post mortem was held at which were present Drs. Crawford, Guthrie and Fell, of Wilkes-Barre, and Dr. C. P. Knapp, of Wyoming, Pa.

"We found the left kidney firmly bound by inflammatory adhesion to the surrounding parts. It was six and one-half inches inlength by nine inches in circumference and weighed fifteen and one-half ounces. The surface of the kidney was smooth, not nodular. The whole of the kidney was tuberculous except the cortex, the tubercular ulceration at one point almost perforating the cortex. The parenchyma was replaced by tubercular cavities and nodules in process of tubercular ulceration and pus formation.

"The right kidney was about twice its normal size and highly congested, but contained only a few scattered miliary tubercules. The mesenteric glands were also tuberculous. The spleen was somewhat enlarged and contained some tubercular deposits.

"At the apex of the left lung was found one small cavity about as large as a medium sized filbert, otherwise the lungs were normal.

"He left Bellevue Hospital July 24th, stood the journey well. His evening temperature on the day after his return was 105°.

"The wound made by the incision, although not healed, never gave us any serious trouble. He had two hemorrhages from the kidneys, one in two weeks, the other in six weeks after his return from the hospital. On examining the urine two weeks before death the field of the microscope was covered with pus corpuscles and renal debris.

"There was diarrhoea for three weeks before death. There were no symptoms of anaemia. He died from exhaustion. I expect to make a report of the case to the Luzerne County Medical Society at its next meeting, and if you will kindly furnish the hospital notes of the case they will, beside assisting me, be an interesting feature of the report.

"I have the diseased organs in my possession and, if you desire it, I will pack them securely and forward them by express to your address as soon as I have made my report to the Society, with the understanding that they be returned to me, as I expect to deposit them in the cabinet of the Society for safe keeping.

Yours very truly,

W. H. FAULDS."

In order to remove all doubt as to the exact pathological condition present, Dr. Crawford made a microscopical exami-

nation of a section of the kidney, the result of which proves conclusively that this is a tuberculous kidney.

The chief points of interest in the case are—First, Was the injury an exciting cause of the disease? Second, The difficulty in making an early diagnosis. Third, Did he inherit the tubercular diathesis? Fourth, Would an operation in the early stage of the disease have prolonged his life?

First, as to the injury. The boy prior to that time weighed 150 pounds, and was an acknowledged athlete in the game of foot-ball. He was a bright student, and according to Dr. Sprague's own statement was before the injury elected valedictorian of his class. From the date of the accident there was gradual failure, so that in six weeks his weight had decreased 26 pounds. His stooped posture, almost from the first, his gradual loss of flesh, the disease being chiefly in the kidney of the injured side, along with the positive statement of Dr. Dickinson, in his work on 'Renal and Urinary Affections,' that among the causes that give rise to the disease primarily and chiefly localized in the kidney, blows and falls upon the lumbar region are conspicuous; and further that the disease has so frequently followed injury, that there could be no hesitation in regarding them as cause and effect, would seem to leave no doubt that the injury, in this case, was the exciting cause of the disease.

As to the difficulty in making an early diagnoses, all medical writers agree that early recognition of the disease is almost impossible. So it proved in this case. Three months after the accident, when examined by Dr. Davis, although his general appearance indicated serious disease, there were no local symptoms—not even slight tenderness—to indicate disease of the kidneys. Neither did chemical examination of the urine furnish any evidence of disease of those organs. The only symptoms then presented were his emaciated condition, his general appearance indicative of pulmonary tuberculosis, the abundant flow of urine, and the vesical irritability.

When examined by Dr. Guthrie, four and a half months after the accident, there was only slight tenderness over the kidney, and so slight enlargement as to make it difficult to decide whether any did exist.

A month later, when again examined by Dr. Davis, there

was no change in the local symptoms, except slightly increased tenderness over the kidney.

The first hemorrhage, with casts of the ureter, did not occur until almost six months after the injury. The microscope at this time showed only a few pus corpuscles and granular casts, and the urine contained only a trace of albumen, not more than could be accounted for by the blood in the urine. So the only symptoms in the early stages were the increased quantity of urine, the vesical symptoms, and the temperature. I regret very much that the temperature was not taken from the first, and that a microscopic examination of the urine was not made earlier in the disease.

It is worthy of note that while not one of the home physicians who examined this patient believed the disease to be cancerous, Dr. Bryant, even after operating, could not decide between cancer and tubercular disease of the kidney, while Dr. Stewart, one of the resident physicians at Bellevue Hospital, when pressed for a diagnosis by the boy's father, gave the following written opinion of the case:

"The patient, N. B. K., is suffering according to our diagnosis from cancerous affection of the kidney. We have arrived at this conclusion, both from his symptoms and the physical signs. Our exploratory incision showed us a large nodular mass involving the kidney and contiguous tissues and prohibiting removal."

The question naturally arises, upon what did we in this case, base our diagnosis of tubercular disease of the kidney, and how was it distinguished from carcinoma of the kidney? We reply—First, The absence of palpable tumor, while in cancer there is usually considerable enlargement. Second, The nightly rise of temperature, which was a prominent feature, is absent in cancer. Third, The vesical symptoms in this case are usually wanting in cancer. Pus in the urine, so marked a symptom here, never occurs in cancer, except by accident. The hematuria was periodical, and occurred only in the latter stages, while in cancer, it is usually an early symptom, and if present in any stage is constant.*

Now, as to the family history. Both of the parents, all of his brothers and sisters—four in number—are living and in excellent health. His grand parents also lived to old age.

* Dickinson on "Renal and Urinary Affections."

But six of his paternal grand father's sisters and three members of his maternal grand father's family died of consumption. So that, three generations back, we have decided tuberculous history.

Would an operation early in the disease have prolonged his life? We think not. The adhesions, which prevented a removal of the kidney when an exploratory incision was made, were in all probability present soon after the injury. The congestion and enlargement of the right kidney would seem to indicate that it had reached a point when it could no longer perform double service. That this condition would have followed had the tuberculous kidney been removed, hardly admits of a doubt. So we are forced to the conclusion that nephrectomy at any stage would in this case, admitting the absence of inflammatory adhesions have been contra-indicated even as a palliative measure.

COPY OF THE BELLEVUE HOSPITAL NOTES.

Examination on admission. Patient emaciated. There is an apparent bulging of left side of thorax, but measurement shows both sides to be the same. Apex beat of heart to the left and below normal position. Examination of heart shows slight mitral regurgitation. Lungs normal. Slight lateral curvature of spine, but this probably due to stooped posture. No tender points on pressure over spine. Pain on pressure over region of left kidney.

| | *Temperature.* | *Pulse.* | *Respiration.* | *Remarks.* |
|---|---|---|---|---|
| June 25, 5 p. m., | 104.2 | | | Urine contained many pus corpuscles, a few red blood corpuscles. Trace of albumen. |
| 26, 9 a. m., | 102 | | | |
| 5 p. m., | 104.2 | | | |
| 9 p. m., | 101 | | | |
| June 27, 5 a. m., | 100 | | | |
| 9 a. m., | 99 | | | |
| 1 p. m., | 99.2 | | | |
| 5 p. m., | 100 | | | |
| 9 p. m., | 103 | | | |
| June 28, 1 a. m., | 102.2 | | | Urine acid; pus cells; few red corpuscles. |
| 5 a. m., | 102 | | | |
| 9 a. m., | 99.8 | | | |
| 1 p. m., | 100.2 | | | |
| 5 p. m., | 100 | | | |
| 9 p. m., | 103 | | | |
| June 29, 5 a. m., | 100.8 | | | Urine; pus cells; red corpuscles. |
| 9 a. m., | 100.2 | | | |
| 1 p. m., | 100 | | | |
| 5 p. m., | 103.4 | | | |
| 9 p. m., | 103.8 | | | |

| | | |
|---|---|---|
| June 30, | 5 a. m., 101<br>9 a. m., 100.4<br>5 p. m., 100<br>9 p. m., 101 | Specimen of urine examined by Prof. Biggs; abundant pus cells; epithelium from bladder, and probably from pelvis of kidney; no red corpuscles. This specimen obtained one-and a-half hours after washing with Thiersch fluid. |
| July 1, | 5 a. m., 100<br>9 a. m., 100<br>1 p. m., 100<br>9 p. m., 102.2 | |
| July 2, | 1 a. m., 100<br>9 a. m., 100<br>1 p. m., 98.8<br>5 p. m., 99.6<br>9 p. m., 102.2 | Long hypodermic needle introduced at three points over tender area, but with negative results. Growth in left abdominal not well defined and immovable. |
| July 3, | 5 a. m., 101.6<br>9 a. m., 99.6<br>1 p. m., 99.5<br>5 p. m., 100.4<br>9 p. m., 102 | |
| July 4, | 5 a. m., 99<br>9 a. m., 100<br>1 p. m., 99.4<br>5 p. m., 101<br>9 p. m., 103 | Urine contained a large amount of pus. |
| July 5, | 5 a. m., 101<br>9 a. m., 100.4<br>1 p. m., 100.8<br>5 p. m., 101.8<br>9 p. m., 100 | |
| July 6, | 5 a. m., 100.8<br>9 a. m., 100<br>1 p. m., 100<br>5 p. m., 101.8<br>9 p. m., 101.8 | |
| July 7, | 5 a. m , 101<br>1 p. m., 101.2<br>5 p. m., 102.4<br>9 p. m., 101 | |
| July 8, | 5 a. m., 100<br>9 a. m., 100.2<br>1 p. m., 101<br>5 p. m., 103.2<br>9 p. m., 102.8 | Blood in urine. He walked much during the day. Stream of urine suddenly stopped, after which passed a blood clot. Urine shows many red corpuscles, and few pus cells. Albumen about one-half by volume. Sp. gr. 1014. |
| July 19, | 1 a. m., 99 —100—24<br>9 a. m., 101.8—100—23<br>1 p. m., 104 —108—26<br>5 p. m., 100.8—100—23<br>9 p. m., 100 —104—24 | Blood clot found in urine. |

| | | | | |
|---|---|---|---|---|
| July 10, | 5 a. m., | 99 | —104—28 | |
| | 9 a. m., | 99 | -- 86—22 | |
| | 1 p. m., | 100 | —104—23 | |
| | 5 p. m., | 104 | —119—28 | |
| | 9 p. m., | 102.2 | —120—28 | |
| July 11, | 5 a. m., | 100 | —118—24 | Operation. |
| | 3 p. m., | 98.4 | —112—28 | |
| | 9 p. m., | 100 | —119—28 | |
| July 12, | 1 a. m., | 100 | —120—24 | |
| | 1 p. m., | 101.2 | —122—27 | |
| | 5 p. m., | 100.5 | —110—24 | |
| | 9 p. m., | 100 | —102—28 | |
| July 13, | 1 a. m., | 100.4 | —120—30 | |
| | 5 a. m., | 99 | —118—36 | |
| | 9 a. m., | 101.2 | —108—26 | |
| | 1 p. m., | 100.2 | —104—28 | |
| | 5 p. m., | 100.8 | —103—27 | |
| | 9 p. m., | 100.2 | —104—24 | |
| July 14, | 1 a. m., | 100.5 | —108—24 | |
| | 5 a. m., | 99 | —108—26 | |
| | 9 a. m., | 99 | —104—26 | |
| | 5 p. m., | 98.5 | —112—28 | |
| | 9 p. m., | 99 | —118—27 | |

July 25, primary union in wound. Discharged not improved. Highest temperature after operation 103°, and that in July 20. Temperature normal July 24. Medication palliative.

## MEETING OF FEBRUARY 4, 1891.

After the routine business was transacted, Dr. I. S. Hileman, of Pittston, read the following paper, which was discussed by the Society. Dr. W. H. Faulds in the chair.

"Antisepsis and Asepsis in Midwifery."

Midwifery is the back bone of general practice. It introduces us to our clients, places us in a most confidential relation with families, and establishes a bond of relation between doctor and patient which is rarely broken. If there is any place where the physician should be held strictly responsible it is here—at the bedside of a woman in the perils of childbirth ; for any mistake or indecision on his part may cause a human life, or doom his patients to months, yes years of helplessness and suffering. If, as is asserted, every fibre, every drop of fluid in her whole organism reacts to a greater or less extent during the parturient state, it behooves us to take care that we are not too willing to dismiss the oversight of the patient with her safe delivery, but to see that those dangers which are present on every side are safely and surely com-

bated. The object to be sought for by every careful practitioner is to restore the whole economy to its regular functional activity; to restore the vital functions of the patients, exhausted or overtaxed by the process of parturition; to enable her to provide the proper amount of nutritive material to supply the wants of her own economy, and to furnish a proper pabulum for the sustenance of her offspring. In no branch of midwifery is there room for more carefulness than in the branch indicated by our subject, "Antisepsis and Asepsis," the prevention of contact between open tissues and living disease germs. Dr. Gusseron, of Berlin, is quoted as saying to his pupils that many a woman's death warrant has been carried under the finger nail of her attendant. Can we not take a lesson from nature? The bee puts a minute portion of formic acid from the poison sac into each cell of honey before closing, thus giving an antiseptic preservative.

Although the field of the parasitic origin of disease has just been fully recognized by us of the nineteenth century, yet indications of the glimmer of its light, a candle's ray it may be, can be seen from what to us are the remote ages. Hippocrates advocated strict cleanliness, using sterilized (boiled) rain water. He taught that suppuration came from putrefaction. Alcohol, sea salt, poplar tar, sulphate of copper were locally applied to wounds. Prevention of the entrance of air was aimed at by spreading cerate over the vicinity of wounds; then compresses, wet in alcohol, were spread over all. M. Terentius Varus (27 B. C.) writes, "Si qua erunt loca palustria, crescunt animalia quaedam minuta, quae non possunt, oculi consequi, et per aëra intus in corpus per os et nares perveniunt atquae efficient difficiles morbos;" surely a reference to *bacillus malariae.* Again, Epictetus (Book IV, Chap. II), writes, "For this reason water, oil, hands, towls, scrapers, nitre—sometimes all others kinds of means are necessary for cleansing the body." Leuwenhoeck, in 1675, was the first to recognize bacteria, calling them "A multitude of little globules, which moved with agility;" but they suddenly acquired an interest to pathologists in 1861, when Pasteur attempted to show a genetic relation between plants and disease. Pollander in 1849 first associated disease with germs, showing the relationship between a bacterium and anthrax. Then, in 1873, the bacterium of Obermeyer was discovered

by the man whose name it bears; and its causation of relapsing fever pointed out. Tuberculosis, syphilis, gonorrhoea, typhoid fever, these have had their germs isolated; and the list might be much extended. And last, but of greatest interest to us, are Koch's investigations and discoveries in septicaemia and pyaemia. In the last quarter of a century more advance has been made in the study of the febrile conditions incident to the puerperal period than in all preceding ages. Before Pasteur's germ theory and Listerism originated, in 1847, Semmelweis, at the Vienna Hospital, had introduced the use of chlorine water before and during labor; on account of the difference in mortality in the two lying-in departments of the hospital. In one the teaching was only for midwives, where the mortality was six to nine per month; in the other the teaching was for midwives and medical students, and the mortality was generally thirty, sometimes as high as ninety a month. The number of deliveries per month in each was from 250 to 300. By Semmelweis' foresight, the mortality in the wards attended by students was greatly reduced. Some of the views as to the cause of puerperal fever at this time were atmospheric, cosmic, telluric, which S. opposed by his views of its causation by "decomposed animal matter." With truth might obstetrics be called the mother of modern antiseptic methods. Even races whose intelligence is supposed to be very deficient exhibit some traces of asepsis. In Central Africa the tribes have rigid rules of bathing after labor. The Burmese have a curious mixture of antisepsis and sepsis. They take care to exclude from the room the fresh air; even the smoke is not allowed to escape; then saffron is placed over the vulva, and the patient is subjected to the fumes of tumeric. In Mecklenburg the people have a saying that is trite to the subject, as showing us what we should avoid. "A woman in labor must stink herself out," or if you prefer better language, "Nature must cleanse and evacuate the parturient passages of women, and during this process the woman does not exhale agreeable odors;" with us those odors should not be found.

At the present time there is scarcely any necessity of speaking on the facts and theories that prompt the preparation of a paper with this title, yet a few facts may be of interest. The germ theory, disease due to bacteria; an interesting subject, if

nothing more. These bacteria are cells, devoid of chlorophyl, of different shapes, reproducing themselves extensively by division and by spores, and living either isolated or in families. Dolley has given a list of over 500 disease germs. This theory is fast being acknowledged by all prominent men. Earle, Fritsch, Klemperer, Hauser, Koch, Pasteur, Burdon, Sanderson, T. Galliard Thomas, Kelly, Hirst, Jackson, Garrigue, Playfair, Lusk, are but a few of the firm believers. Even Tait, one of the most pronounced skeptics of antisepsis says (September 27, 1890) in speaking of sepsis, "There are two factors in the trouble, and it can be shown conclusively that one, *the germs*, are wholly inconsiderable without pabulum to feed on ; while the other, the pabulum, is sure to breed trouble, *because it is practically and mechanically impossible to keep the germs out.*" Gallabin also has recently abandoned his autogenetic division of puerperal fevers. That these bacteria exist in all around us is abundantly proven. Miquel has shown that there are 2000 bacteria to a cubit yard of air in the ordinary atmosphere of a large city, 4500 in a cubic yard of air of an old house during winter, 95,000 in a cubic yard of the air of a long used hospital. Sea air, and air from mountain heights was found to be nearly free from bacteria. Why then are we not all affected? Healthy living tissues have in themselves a great power of resistance to the growth and multiplication of micro-organisms The leucocytes are the knowledged factor in the destruction of these bacteria, they constitute the so-called phagocytes of Metschnikoff. The fate of these bacteria in the blood is—

1. They may be wholly destroyed without multiplication.
2. They may multiply at one or two points of diminished physiological resistance, and remain only scattering or non-vegetating in other parts of the system.
3. They may multiply in the general circulation everywhere.
4. After localized multiplication they may produce lasting spores, which may remain for a long time imbedded in the cicatrical tissue.

As regards the bacterium of puerperal sepsis, the consensus of opinion has been well expressed by Smith :

1. There exists in the blood of a woman suffering from puerperal fever a particular micro-organism.

2. This micro-organism is a strepto-coccus, which differs much from others, as shown by cultivation and inoculation.

3. The action of these upon rats and rabbits is very definite.

4. It differs decidedly from the strepto-coccus erysipelatous of Fehleisen, and the strepto-coccus of Rosenbach.

Dr. Alexander, of Liverpool, is one of the few prominent men who still believe that germs of other diseases will cause puerperal sepsis. Noeggerath, of New York (1883), isolated his bacterium of septicaemia, and found its habitat to be in sewers. It was of the genus Porteus, a saprophyte. Vidal claims that, in general, infectious accidents are due to the strepto-coccus pyogens, this being the only strepto-coccus that will infiltrate the uterine wall, and this will do so only when the mucous membrane has been broken or eroded. The tubes and ovaries normally do not contain micro-organisms; the secretion from the vagina and cervix of every healthy woman contains a large number. In one-half of all cases examined some of the germs were pathogenic (three kinds of staphylo-coccus), but in a state of attenuation. (This throws some light on the theory of auto-inoculation.) Yes, Hervieux's aphorism may well be taken as our creed; "I believe in the multiplicity of puerperal diseases, I believe in their origin from puerperal poison." The conditions which the vagina presents during parturition, as to warmth, moisture and food material, are highly favorable to the life, growth and propagation of these organic forms.

Recognizing then the dangers to which our patients, this puerperal woman and this infant, are subjected from these small but potent causes of trouble, shall we not take every means in our power, to prevent, if possible, any approach of danger? Significant is the fate of a Prussian midwife, whose footsteps (or rather handtouches) were followed by puerperal fever and death. She was convicted of gross neglect of cleanliness, and the Tribunal of Correction sentenced her to prison for three years, and forbade her practicing for a year and a half after her freedom was granted. But what means have we at our command? Asepsis and anti-sepsis in all their minute details. In looking at this matter we should not base our calculations of the danger from the mortality alone; stated broadly, where one dies three or more are retarded in their

recovery by a state of fever more or less mild, or by secondary effects, such as cellulitis. The normal lying-in woman, the one in which parturition is purely a physiological and not a pathological act, should not have a temperature of over 100° F. at any time after delivery. How many of our patients are thus blessed? The familiar and misnamed "milk fever" is nothing but a mild sepsis; one that can be eradicated by suitable means.

The prevention would naturally be the first and important subject; then the treatment, I will not say cure, if we are lax enough in our methods to have a case of fever needing treatment. The great desideratum is cleanliness—the asepsis—and this is possible by care and attention to details. The practitioner should not attend cases of labor and infectious diseases simultaneously without taking extra precautions as to bathing and entire change of garments after visits to such infectious cases. The nurse should be thoroughly instructed, and care taken to see that she follows out her instructions. The cleanliness of the bed-chamber should be rigidly looked into; the air, the bedding, the sunlight. The room should have no superfluous furniture nor hangings, even carpet might be dispensed with. In the Vienna General Hospital a woven wire mattress is used instead of an ordinary one on lying-in beds. For various disinfectant purposes, as to room, furniture, cloths, etc., the report of the committee on disinfectants of the American Public Health Association is here given in part; those disinfectants being mentioned that are feasible for ordinary use, and for our purposes.

I.—*To Destroy Spore Containing Infectious Material.*

(1) Fire, (2) Boiling in water one hour. (3) Chloride of lime 4 per cent. solution. (4) Corrosive sublimate, 1–500 solution.

II.—*To Destroy Infectious Material not Containing Spores, but Micro-Organisms.*

(1) Fire, (2) Boiling in water one-half hour. (3) Chloride of lime 4 per cent. solution. (4) Chlorinated soda 5 per cent. to 20 per cent. solution. (5) Corrosive sublimate 1-400 to 1-100 solution. (6) Sulphur dioxide exposure for twelve hours to an atmosphere containing at least four volumes per cent. of

the gas preferably in the presence of moisture. (7) Carbolic acid 2 per cent. to 5 per cent. solution. (8) Chloride of zinc 4 per cent. to 10 per cent. solution. (9) Sulphate of copper 2 per cent. to 5 per cent. solution.

III.—*For Excreta; Spore Containing.*

(1) Chloride of lime 4 per cent. solution. (2) Mercuric chloride 1-500 solution.

IV.—*For Excreta in the Absence of Spores.*

(1) Carbolic acid 5 per cent. solution. (2) Sulphate of copper 5 per cent. solution. (3) Chloride of zinc 5 per cent. solution.

V.—*Soiled Underclothing, Bedding, Etc.*

(1) Fire, (2) Boiling one hour. (3) Immerse in mercuric chloride solution 1 to 2000 for four hours. (4) Immerse in a 2 per cent. carbolic acid solution for four hours.

VI.—*Outer Garments that Cannot be Immersed.*

(1) Dry heat (230° F.) for two hours. (2) Fumigate with sulphurous acid gas for at least twelve hours, the gas being present in at least four volumes per cent.

VII.—*Mattresses and Blankets Soiled by Discharges of the Sick.*

(1) Fire, (2) Immerse in boiling water for one hour. (3) Immerse in blue solution (mercuric cloride and sulphate of copper) two fluid ounces to the gallon of water.

VIII.—*Furniture, Articles of Wood, Leather, Porcelain.*

Washing, several times repeated, with (1) Mercuric cloride, 1-1000 solution. (2) Chloride of lime 10 per cent. solution. (3) Carbolic acid 4 per cent. solution.

IX.—*For Sick Room and Hospital Wards While Occupied.*

Wash several times with (1) Mercuric chloride, 1-1000 solution. (2) Chloride of lime 1 per cent. solution. (3) Carbolic acid 4 per cent. solution.

X.—*For Hospital Wards and Sick Room when Vacated.*

Fumigate with sulphur dioxide for twelve hours, burning three pounds of sulphur for each 1000 cubic feet of air space, then

wash with one of the above solutions, then with soap and water, and finally air thoroughly.

Worthy of mention in this connection is Prof. Dobroslarvin's stove for disinfecting rooms. By adding sodium chloride to water he raises the heat of evaporation to 108° C. The boiling point is reached in two or three hours, and by the heat the room is disinfected; spores of bacillus subtillus being killed in three hours.

The ventilation of the room should receive serious consideration. Too often do we find that every avenue of entrance for fresh air and escape for foul air is shut off, for fear of "chilling" the patient. Fresh air is one of the best antiseptics we have. It is well known that contagia diluted beyond a certain point are powerless. The proximity of closets should be looked into; it is such a convenience to have a bathroom opening from the bedchamber. We have seen that our friend, the bacterium of Noeggerath, has its habitat in sewer gas; hence the growing tendency of many of our families to locate their closets in proximity to bed rooms should be discountenanced by all our energies. In the absence of sewer connections, the dry earth closet should be employed in all possible cases. Well did an old writer inculcate the truth that the better the air and the more bountiful its supply, the healthier is the inmate of a house, be it palace or cottage, when he said. "When men lived in houses of reed, they had constitutions of oak, when they lived in houses of oak, they had constitution of reeds." It even seems from a consideration of the statistics and literature of the subject that the malaise of the dissecting room is more due to impure air, than to absorbtion of septic material. The aid of the sunlight should not be discarded in our efforts. An abundance of this is essential.

The means that we possess of diagnosis, and the various manipulations by external methods alone, if carefully and intelligently done, are potent factors in preventing sepsis; discarding as they do numbers of vaginal examinations. These manipulations were practiced as early as 1601, but having fallen into disuse were revived by Tarnier in 1865. Thus we can diagnose with reasonable accuracy all ordinary positions and conditions, indeed, some enthusiasts claim to be able to diagnose the extraordinary conditions, as relative size of head and pelvis in contracted pelvis. Under favorable cir-

cumstances (relaxation of abdominal wall, absence of irritability of uterus, and a relative large amount of liquor amnii) versions have been performed. Credes' method for the expulsion of the retained placenta is so prominent that its name is all that need be mentioned. By making use of the left hand as an examiner in gynaecology and the right in midwifery, another source of danger is avoided.

The attention to the woman should be enforced by precept and example. Everything should be chemically clean. Her warm baths, should, before the accouchment, be taken twice a week if nothing contra-indicates them. Vaginal injections, before and after labor, should not be given, unless indicated. The following are a compend of the practices adopted by a great majority of obstetricians from whom I was able to obtain data, either through personal letters, or through journals and monographs.

I. A warm bath to patient, just before labor, if possible.

II. Wash the hands, before examining, thoroughly in soap and water, using nail brush ; having first cleansed the nails with a knife ; then use alcohol for not less than a minute ; then place in an antiseptic solution for not less than a minute.

III. Bathe, just before labor, the external genitals, especially the hairy parts with an antiseptic solution, and also when vulvar dressing is changed.

IV. Soiled lochial guards and all soiled linen should be immediately placed in an antiseptic solution and removed from the room. This also applies to excreta.

V. All instruments should be thoroughly boiled after their use, and disinfected before again using. (This rule is prone to be overlooked by the nurse in using the catheter.)

VI. In using the catheter, the meatus and surroundings should be cleaned by an antiseptic solution.

VII. The nurse should wear washable dress materials.

VIII. An antiseptic pad for occlusion of the vagina should be applied after the patient has been cleansed.

In addition to the above, a few physicians advise as follows :

IX. Warm antiseptic vaginal injections before and after labor.

X. Insert a vaginal suppository of iodoform to the os uteri.

XI. A powder of iodoform and boracic acid is thrown into the vagina after labor.

XII. Dress sore nipples in a dressing wet with alcohol.

XIII. The nipples should be daily cleansed with a solution of borax during the month before labor. During nursing they should be cleansed after each nursing with a weak antiseptic solution.

The best antiseptic for cleansing the hands and external genitals is the one that is surest, corrosive sublimate in a solution of 1–1500. Ether is an excellent substitute for alcohol in overcoming the sebaceous material on the hands, and has the additional benefit of being more often couvenient. For purifying instruments, the choice lies between a 5 per cent. solution of carbolic acid, and a solution of creolin of equal strength ; the latter probably better on account of greater antiseptic properties, more pleasant odor, and harmlessness.

The pad should be made of salicylated, or otherwise medicated cotton, with a backing of carbolated gauze ; to be burned when soiled. In addition to the antiseptic properties of this pad, it will enable us to judge more accurately of the amount of lochial discharge. No sponges, filthy as they are apt to become, are to be used. Antiseptic jute is probably the best substitute, as it is cheap enough to be burned. A convenient and desirable substitute for the mass of old blankets, quilts, and rags that catches the liquor amnii and general mass of debris which occurs during labor is a pile of newspapers, affording a protection that can be burned, and doing away with the disagreeable washing of the blankets, that are too often disgustingly dirty when offered for use. All apparent tares should be dusted with iodoform, and treated by immediate suturing ; to be followed by an injection of a five per cent. solution of creolin. If course, care is taken that every part of the after birth is removed. An oily solution of carbolic acid is preferable for lubricating purposes, or a simple watery solution of creolin is said to be oily enough for use as a lubricant.

If our attempts prove of no avail, and fetid lochia, or symptoms of fever, however slight, appear, the adoption of more active measures is at once suggested. Vaginal douches

should at once be given, the uterus freed from any decomposing material by means of the curette, and any other focus of infection in the parturient canal removed. The antiseptics that are and have been recommended and used for vaginal and uterine douches are numerous. Carbolate of zinc, chlorine water, biniodide of mercury, oil of encalyptus, permanganate of potash, tincture of iodine, salicylic and boric acids, the double cyanide of zinc and mercury, hydro-naphthol, sozoidol, oxynapthoic acid, salol, chinolin, iodol, naphthalin, thalin kairin, saccharin, thymol, alcohol, Labarracques'solution have all been used,only to be forgotten in midwifery. Carbolic acid, bichloride of mercury and creolin are the ones now worthy of remembrance. Carbolic acid, by reason of its inhibition of nerve action and extreme insolubility, need not be seriously considered. Between the last two, a choice is difficult; the bichloride being a positive germicide with an attendant danger of mercurilization. Creolin, as said by Kōrtum and concurred in by numbers of investigators, being a non-poisonous antiseptic, diminishing secretion, promoting granulation, and arresting hemorrhage properties not manifested by any other simple antiseptic.

When puerperal fever develops, heroic treatment should be undertaken.. Intra-uterine injections of a 1-3000 solution of corrosive sublimate are to be employed, using Bozeman's tube; and care being taken that free drainage is allowed for the fluid. Two quarts of this solution, at a temperature from 110° to 115° F. is advisable at a sitting. If by reason of kidney disease, anaemia, or diarrhoea, mercury is contraindicated, creolin is the best substitute. As in the normal puerperium rest is the one thing to be desired, so here it must be insisted on. By the use of tartaric acid combined with the corrosive sublimate the precipitation of insoluble albuminate of mercury (soluble in an excess of albumen) is avoided, thus escaping in part the dangers of absorption and consequent poisoning. Intra-uterine bougies of iodoform have been advocated by some; probably they are seldom required, only when there is putrid endometritis. In using a syringe for douching a Davidson's is better than the fountain, the danger of rupture of the parturient womb from this instrument being nil, as only a pressure of twenty pounds can be brought to bear with it. At least one case, with good results is reported

of the removal of the septic puerperal uterus; opening up a field that may be full of promise in otherwise hopeless cases. The general treatment for this malady appears to be based mostly on the idea of antisepsis. That chimera, chlorate of potash, is no longer the sine qua non it once was. Much hope rests on iron, acting as it does as an ozonizing agent, and as such an agent producing a powerful antiseptic effect; whose value is still further enhanced by its being a physiological antiseptic in the true sense of the term. Dr. Runze (St. Petersburg) gives alcohol and daily hot baths (81½° to 85½° F.) quinine, turpentine; hypodermics of phenic acid, oil of eucalyptus and morphine have all proved useful. Enemeta of chloral and belladonna can sometimes take the place of our sheet anchor—opium. The more powerful antipyretics or cold water are supposed in some quarters to be essential for hyper-pyrexia. Aconite or veratrum viride are to be employed as heart sedatives.

After the use of corrosive sublimate its abuse of the hands may in a great measure be corrected by washing with soap and water, drying, and using an ointment of which the following may be a suggestion:

℞ Lanolin, - - - - - 79 parts.
Parrafin Liquid, - - - - 19 parts.
Ext. Vanilla, - - - - 2 parts.
Ol. Ros, - - - - - - gtt. 1.
Me. ft. terendo unguent.
Or Glycerine and Rose Water, or Lanolin alone will suffice.

Our obstetric bag; is it for us a friend or a foe? A practical one is made that can be put in a kettle of boiling water and disinfected, being of canvas sides and wooden bottom.

From the standpoint of the infant, our treatment should also embrace asepsis. The old habit of dressing the cord with a scorched rag is an indicator. It should, after drying, be dressed with an antiseptic wool or cotton, either borated, salicylated, or carbolated. On the umbilical wound dust finely powdered boracic acid, and dress it by dry antiseptic cotton, held in place by a binder. Dr. Currier, to prevent infection through the open wound in the umbilical cord, has suggested the extreme measure of the application of a plaster-of-Paris bandage. Again, bathing should be fully and carefully accomplished. As a prophylaxis against ophthalmia a 5 per cent. solution of silver nitrate is to be instilled into the eyes.

Disraeli tells us, "Mother's milk makes the true born Englishman," but if it is necessary to resort to bottle feeding a problem is before us; that of getting the hearty co-operation of mother and nurse in the careful preparation of the food, for the all important sterilization is not appreciated as it should be. Milk cannot be rendered sterile by boiling, for the heat necessary to do this will burn, i. e. scald it. Seibert's apparatus for this purpose is the best to take for our model. It consists of bottles, the size of which is graded to the weight of the infant, holding enongh for one nursing, marked to indicate the amount of different materials to be used, and having their mouths filled with furrowed corks. Enough of these bottles are filled each morning to last twenty-four hours. Then they are placed in a tray, so made as to fit in a covered kettle having its bottom covered with water, the bottles not touching the water. The water is boiled from one-half to one hour, and then the apparatus is set away in a cool place, each bottle being warmed as desired for use. A somewhat cheaper and more simple apparatus can be made by taking an egg boiler with a ring in the handle through which a small stick can pass, this to fit in supports soldered on the inside of an ordinary tin pail. Bottles of requisite size can be had at the shops, and cords supplied by baked cotton. The composition of the food; whether Keating's Formula, Canfield's Evaporated Milk, Borden's Condensed Milk, with or without the grain foods, may be left to individual needs and idiosyncrasies. The diaper should be changed as soon as soiled, the parts being washed clean.

Statistics bearing on this subject have, in some respects, been hard to obtain. Dr. Alexander Gordon publishes accounts of outbreaks of puerperal fever in Aberdeen in December, 1789, and at Munich in 1792. In the table of seventy-seven cases under his own care he found that the nurses, midwives, and physicians, were responsible for the spread and continuation of the disease. A report is given by Dr. Roberston, of Manchester, of puerperal fever in St. Mary's Hospital due to one infected midwife. Duncan (England, 1879), claims one death in 120 deliveries as due to sepsis, while Fau claims one in 129. In commenting on Fau's paper Carrol says, "Nearly the whole of which should be avoided by aseptic midwifery and after management." McClintock (Scotland, 1876), estimates one septic death in 100 births.

| NAME. | PLACE. | BEFORE USING ASEPSIS. | | | | AFTER USING ASEPSIS. | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | *Year.* | *Deliveries.* | *Deaths.* | *Per Cent.* | *Year.* | *Deliveries.* | *Deaths.* | *Per Cent.* |
| Braun . . . . | Vienna . . . . . | 1857–79 | 93903 | 1839 | 1.9 | 1881–86 | 15000 | 106 | 0.7 |
| Garrigue . . . | Blackwell's Island, N. Y. | 1875–83 | 3272 | 138 | 4.17 | Since 1883 | | | Less than 1. |
| | Maternity Hospital, Phila. | 1873–79 | 375 | 5 | 1.3 | 1879–90 | 1130 | 6 | 0.516 |
| | Lying-in Hospital, Vienna. | 1863–80 | 1000 | 11 | 1.1 | 1880–86 | 1000 | 4 | 0.4 |
| | Dresden Clinic . . . . . | 1872 | 1000 | 50 | 5. | 1884–87 | 1000 | 3.05 | 0.3 |
| | New York Maternity . . . | 1883 | 1000 | 60.6 | 6. | | 1000 | 3.3 | 0.33 |
| Zürke . . . . | | | 400 | Septic 1 | 0.25 | | | | |
| Baruch . . . . | | 20 yrs. | 600 | Septic 1 | 0.166 | | | | |
| H. Leaman . . | | | 600 Annually | Septic 3 Annually | 0.5 | | | | |
| | Prussian Empire . . . . . | 1816–75 | 1600000 | 11200 | 0.7 | | | | |
| Price . . . . . | Preston Retreat . . . . . | | | | | 1883–88 | 540 | 0 | 0. |
| Tarnier . . . . | | | | | | | 1200 | 6 | 0.5 |

Hirst (1887) gives tables of thirty-four large hospitals in nineteen cities of this country, in which the mortality (from 1880 to 1885) was 2.59 per cent. Since then (1885) he found, with the use of asepsis, the mortality fell in Blockley Alms-House to 1.52 per cent., and in 1888 eighty-seven cases are quoted from here without a death, and the later statistics of the same hospital sustain this record. In the Boston Lying-in Charity, the mortality, with asepsis, fell from 55.5 deaths per 1000 to 1882 to no death in 1886. Kehner states that before using bichloride ⅔ of his cases had fever; after using, ⅔ were free from it; and Koch on being asked about the unexplained cause of septicaemia replied, "Well, I hardly think we will ever get that question settled here in Germany, because septicaema has been exterminated." In Dublin Rotunda, without active antisepsis, i. e. without injections, the mortality is 0.57 per cent. At Dresden Lying-in Hospital Leopold had in his first year of aseptic precautions a mortality of 1 per cent., the third year it fell to fourteen deaths per 10,000 deliveries. Lately he has carried on a series of experiments that are well worth observation. In 1388 deliveries an injection was given before and after labor; 17.2 per cent. had fever in the puerperal state. In 1136 cases injections were given, and in addition, the vagina was rubbed all over with pledgets of cotton soaked in corrosive sublimate solution; 20 per cent. had fever after delivery. In 1123 cases no injections, no washings were given. The external genitals, especially the hairy parts, were all washed before labor with soap and water. The hands of attendants by soap and water, alcohol, and then bichloride 1–1000. Result 9.7 per cent. had fever after delivery.

Summarizing, we may say:

1. The precautions incident to the antiseptic treatment are of the greatest value independent of their connection with the germ theory, viz: Drainage, cleanliness, rest.

2. Antiseptic agents may accomplish as much by preventing decomposition, thus destroying a fertile field for the development of germs, as by the destruction of the spores themselves.

3. In obstetric practice their intra-vaginal use should be limited to abnormal labors, and when intra-uterine douches are used only the weaker solutions should be employed, and they only with caution to insure their ready escape. (Smut.)

The occurrence of sepsis should always be regarded as an indication that there is something defective in our methods, and should cause us to seek in our own sins of omission or commission for the explanation of those accidents formerly credited to the idiosyncrasies of the patient or to the dispensation of Providence. The conditions, then, essential to success are a clean operator, clean assistants, clean patient, clean dressings, clean room, clean furniture, and a clean atmosphere. In our desire to cure the disease, we should never forget that in prophylaxis, in asepsis, lies our greatest hope; and while this grim skeleton at life's banquet is becoming more surely shackled day by day, yet to the energetic minds of the present belongs the task of lifting both voice and hand, even in the smallest sense, towards the consummation of that benificent purpose which the science of medicine ever holds in view. Indeed, as a "glittering generality" it may be stated that every obstetric advance, which saves mothers from invalidism and children from incapacity for future effort must promote the social condition of man. How much that condition is promoted by us depends on our methods of asepsis and antisepsis, and to the closeness of our attention to these methods; being blest by the knowledge of ministering to our fellow man; content because in the path of duty, yet rejoicing to see the fruits of our deeds spring up.

DISCUSSION.

Dr. Davis.—There can be no question on this subject. The results prove it. In private practice there is great difficulty in carrying it out. The amount necessary in private practice not settled. Some cases occur in which it may be carried out, but in the great proportion we are called in at delivery. Simple means only can be used. Let physician himself be aseptic—clean!

Dr. Howell.—The most important thing is cleanliness, but don't be meddlesome.

Dr. Fell.—Its my custom to be clean, and myself aseptic. Extra precaution as the case may require. Catheterize openly, and have an aseptic instrument.

Dr. Taylor.—My obstetric practice limited. Kelly's Glass

Catheter is a commendable one. Catheterization under bedcloths should be an exploded idea. Tell the patient what is necessary and why. Elaborate antisepsis too hard to carry out in private practice. Be clean! I don't think it necessary to use a 5 per cent. solution of silver nitrate for infants' eyes. Wash the eyes first, when the water is clean; it is usually performed at the end. Use clean boiled water.

Dr. Weaver.—Puerperal fever was once thought to be an entity. But we now guard against it, as a septic fever. The wounded condition of the patient varies. The obstetric forceps not so much a cause of this as generally stated. The amount of bruising should indicate the amount of precautionary measures. These things are hard to carry out in private practice. A dirty nurse is often the cause of much trouble.

Dr. Murphy.—In marked cases of sepsis don't be afraid to curette, and remove offending material and irrigate. Viscum Album, I prefer to Ergot on acconnt of more constant construction. I like to use a f ʒ i after all cases of labor.

Dr. Harvey said he used oakum made into a pad, instead of ordinary napkin, or a bichloride pad.

Dr. Kunkle.—I can endorse the curette. Would like to know how best to use vaginal and uterine irrigation, on the table, or in bed.

Dr. Murphy.—I place patient on table to irrigate the womb. Bed pan in bed for vaginal douche.

Dr. Weaver.—Double current irrigation can be used in bed, both for uterus and vagina.

Dr. Roe.—The principle thing is cleanliness. Have a clean catheter.

Dr. Davis.—Is the source of trouble, external or internal? Does a natural discharge infect?

Dr. Taylor.—I answer the question by asking another. How do you know we have a natural discharge? What is a

natural discharge after labor? Material harmless in the vagina, may be hurtful in the bladder.

Dr. Davis.—My question is. Does material left in the womb become poisonous from within or without? Does it always become poisonous? There must be a poison from without. The uterus after labor always contains blood clots, more or less, that come away harmless. What constitutes the exception in the poisonous cases.

Dr. Taylor.—In my first remarks I said the physician himself should be clean. The essayist shows there are microbes in the vagina. I would not want to introduce any uterine discharge into the bladder. The contagium comes from without.

Dr. Faulds.—I am interested to know how far you all go in antisepsis and asepsis. I use cleanliness—1200 cases and three deaths. I use soap as a lubricator. I empty the womb as thoroughly as I can, and leave the bed clean. Air in contact with discharges make septic material. I use Jensen's Uterine Douche in the bed. Pads are used to prevent air coming in contact.

Dr. Roe.—How far, should we be careful about attending patients when attending erysipelas or other infectious disease? I have attended cases while treating erysipelas. In one case I used an aseptic glove.

Dr. Davis.—Have had a case of erysipelas in women six months pregnant, and miscarriage without trouble.

Dr. Murphy.—Two cases of scarlatina during confinement without trouble.

Dr. Faulds.—A case of erysipelas during confinement without bad effects.

Dr. Knapp.—A case of measles in the parturient women, and no bad effects during puerperium.

Dr. Weaver thought infectious diseases dangerous in same

ratio.. Let the physician be aseptic. Puerperal fever, however, was hard to guard against by asepsis.

Dr. Hileman closing read extract from letters from two prominent teachers. One laying great stress on elaborate toilets during labor, and the other laughing at the "*tomfoolery.*"

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MEETING OF FEBRUARY 18, 1891.

Dr. Faulds in the chair. The attention of the Society was called to the fact of an illegal practitioner, who was carrying on a practice on the basis of a pedlar's licence.

Dr. Knapp offered an amendment to the constitution providing for a Committee on Publication.

Dr. Guthrie moved that the Luzerne County Medical Society request the members of the Legislature to support Medical Examiners Bill of the Pennsylvania State Medical now before them.

Dr. Murphy.—I expected to prepare full notes of the case I wished to report, but had not time. Called to see a woman in labor whom I had delivered about fourteen (14) months before. I thought it a breech presentation. Found a large mass in the vagina, but could not find *os uteri.* Have seen cases of occlusion of the os, but in such cases there is a depression. Could find no os at all. As woman was not suffering much, went home and called next day. Examination with same result. Called Dr. Crawford in consultation. We gave chloroform, but could not find os. Called Dr. R. Davis, and further examination gave same result. On the following day the woman suffering a great deal the case demanded interference. Labor was strong and pains well marked. Decided an operation should be performed. Either Caesarian section or vaginal hysterotomy as we were fully decided a child was in the uterus. Under an anaesthetic and by forcible examination we found the os at last, high up under the pubis. In drawing down the posterior lip, the os being partly open, we found a foot presenting, but could not deliver on account of the mass in vagina ; by pushing up the mass, and pulling down the os, the mass finally yielded and delivery was effected. Woman

was ill for several days. Had to be placed on table. The womb curretted and thoroughly irrigated. Good recovery followed. The case was evidently one of semi-retro-version of uterus at term, which is very unusual and very puzzling.

Dr. Davis.—Dr. Murphy has not said the tumor in the vagina was the childs buttocks, and was down on floor of the pelvis, while the os and part of the child presenting was above the symphysis pubis. It was certainly an unique case, and I have never seen or read of the like. My opinion was also that it was a case of retro-version of the womb, that had not righted as it usually does, during the period of gestation. The question was in the first place, was there a child in the womb, and then after Dr. Murphy found the foot, what was the tumor that was settled by pushing it up, and traction on the foot?

Dr. Guthrie read the notes on a "Case of Trephining" in his service at Wilkes-Barre Hospital.

William Fisher, age 42, born in Poland, residence Duryae, married, laborer.

Admitted to the hospital, February 14th, with a history of having been unconscious for one week, the result of a blow on the right side of the head, sustained by falling down a flight of stairs.

When admitted he was still unconscious and there was paralysis of the right side.

Port Mortem.—The brain was removed and a hardened clot the size of a five cent piece was found one-half inch anterior to the place of trephining; the middle meningeal artery was ruptured, and there was a large collection of bloody serum found between the brain and its membranes, covering the entire left frontal lobe of the cerebrum.

Dr. Taylor.—A man I saw at South Wilkes-Barre shaft shows the good results of early trephining. He was struck on the head by a falling body, down the shaft, causing a small wound. I enlarged it, but could find no fracture. He became unconscious, and urine retained. On the third day, with Drs. Crawford and Guthrie, we trephined. Found fracture not at seat of wound, but on left side, extending down to the ear. The button of bone was taken out in front of the fracture. Clot was not removed, but the trephining taking off the pres-

sure, the symptoms quickly passed away, and under aseptic treatment recovery soon took place, and he died a year after of typhoid fever.

Dr. Murphy.—I am in favor of early operation in these cases.

Dr. Guthrie read the notes of a "Hip Joint Amputation" in his service at the hospital.

August Krieger, age 45, born in Germany, residence Wilkes-Barre, married, carpenter. Family history negative.

Patient always had good health until his present trouble. November 12th, 1889, while getting off a train he lost his footing and fell, sustaining a fracture of the femur at its upper third.

He was taken to the Episcopal Hospital, Philadelphia, for treatment. At the end of two and one-half months his thigh was put in plaster cast, and he was allowed to sit in a chair.

Shortly after this, while removing him from the chair to his bed, his femur was accidentally refractured. From this time his thigh began to enlarge, and amputation was advised, but patient refused. He remained at this hospital seven months, when he became dissatisfied, and went to the Homeopathic Hospital, Philadelphia. Here also amputation was advised, but still the patient refused, and at the end of three weeks he came to his home in Wilkes-Barre. Several physicians were consulted and all advised an operation.

In the summer of 1890 he came to the hospital to have the operation done, but for some reason left before it could be accomplished. During all this time the thigh was assuming immense proportions; and when again admitted to the hospital, February 6th, 1891, it was thirty-one inches in circumference; there was great pain, and the veins were distended.

A diagnosis of osleo sarcoma was made, and a hip joint amputation decided upon.

Dr. Long read "A Case of Concealed Accidental Hemorrhage in Labor, a Cause of Post-Partum Hemorrhage."

My reason for reporting this case is because this accident is rare, and to call forth a discussion and reports of like cases from members of the Society, and also to discover whether the accident should have been discovered before the delivery

of the child, and not because I have anything new or startling to offer as to treatment.

On the morning of January 1st, 1891, I was called to see the patient, age 26 years, weight 155 pounds, height 5 feet 4½ inches, to attend her in her third accouchément. Her previous labors were normal in every respect and comparatively easy. The patient had never had any severe illness, nor any trouble at her menstrual periods. Her history was good, and up to the time of her labor her condition was good, having been able to take exercise and do her ordinary work around the house. Examination showed the os sufficiently patulous to allow two fingers to enter, the occiput presenting in the r. o. a. position. Labor pains were not severe nor frequent. The foetal heart sounds could be distinctly heard. My experience with the patient in her prevous labors lead me to assure her that she was all right and would probably have an easy labor.

About 1 o'clock P. M. her husband called me again informing me that the patient had suddenly been inflicted with a severe pain about a quarter of an hour before, which came on while the patient was in a stooping posture. The pain was so severe that it caused the patient to faint. I found the patient in bed, rather pale ; the pulse, which is 80 when normal, about 105, but very weak and the patient complaining of a severe continuous pain in the right hypochondriac region. It did not occur to me to again examine for foetal heart sounds. The contour of the child could be followed by external manipulation, and there did not appear to be any asymetry about the uterus.

The os was now open to about the size of a twenty-five cent piece, and labor pains were frequent, sharp and cramp-like, though somewhat irregular. The labor progressed during the course of the afternoon, the patient constantly complaining of pain in the right hypochondriac region. At 6.30 P. M. the patient gave birth to a large female child, weighing more than twelve pounds. During the whole labor the pains were very severe and sharp, and at no time did there seem to be any call for external interference. There was some delay in the delivery of the shoulders. The child was born *dead.* The natural delivery of the placenta followed immediately after the child, and with the placenta came away four large

clots of blood, each as large as a fist, demonstrating the fact that there had been a concealed ante-partum hemorrhage. Following these clots was a *severe* post-partum hemorrhage. The uterus was relaxed and showed no tendency to contract under external manipulation. The routine treatment for post-partum hemorrhage was employed; manual compression, injections of hot water, of vinegar and ergot, with the effect of causing the uterus to contract temporarily; but again and again it would relax and become flabby until the patient lost a large amount of blood, the pulse became weak, thready and scarcely preceptible to the examining finger, and the patient had repeated attacks of syncope. Nitro-glycerine, aromatic spirits of ammonia and whiskey were used hypodermatically until the patient rallied. The hemorrhage was gradually controlled. During the night and after all danger was thought to be passed the patient had several attacks of syncope. The patient made a good but tedious recovery.

The child was a well developed female child weighing above twelve pounds. It was alive in the morning, and there was no special delay in the delivery which would account for its death.

There was nothing in the microscopic appearance of the placenta which would mark it as pathological, or cause its premature detachment.

I think that the hemorrhage, which almost cost the patient her life, was caused by a premature partial detachment of the placenta, which probably occurred when the patient stopped down, about 1 o'clock P. M., immediately after which she had the severe pain on the right side and fainted. I feel grateful to Dr. Stewart for his prompt and valuable assistance in this case.

Dr. Henry C. Cox, on December 2, 1890, reported a fatal case of "Concealed Accidental Hemorrhage During Labor," before the New York Obstetrical Society, in which there was premature detachment of the placenta and hemorrhage before rupture of the membranes, and in which he hastened the delivery of the child with the forceps. He thinks that in his case death was due to shock more than hemorrhage, as there was not an extreme amount of blood lost.

As long ago as 1869 Goodell reported 106 cases of accidental concealed hemorrhage in labor, of which nearly 50 per

cent. of the mothers died, and all the children except six. I simply report my case, and I have made no attempt to describe the various causes nor the treatment of accidental concealed hemorrhage during labor.

Dr. Davis.—How can we diagnosticate ante-partum hemorrhage?

Dr. Long.—Firm clot delivered along with the placenta. Sudden cramp during labor, followed by irregular pains.

Dr. Murphy.—How long before you could use forceps?

Dr. Long.—In about two hours. There didn't seem any pressing reason to before.

Dr. J. Harris Jones.—Didn't delayed shoulders cause the firm clot?

Dr. Guthrie.—If it wasn't ante-partum, what was it?

Dr. Faulds.—I have had two cases, and can endorse Dr. Long's case. The hemorrhage is not always concealed, and often the condition of patient is extreme. In both of my cases the children were dead.

Adjourned.

MEETING OF MARCH 4, 1891.

Dr. Faulds, president, in the chair.

The amendment to the Constitution, creating a Committee on Publication, adopted.

Drs. Knapp, Taylor and Weaver appointed.

A letter from Dr. W. S. Foster, Secretary of the Committee on State Medical Examination Bill of the State Society was read, and laid on the table.

The proposed new Health Ordinance of the city was read and discussed, and Drs. Taylor, Weaver, Guthrie, Murphy, and Stewart, appointed a committee to examine and report.

Dr. D. W. Mears was excused from the paper of the evening.

The subject for the April meeting was fixed as "Mastoid Disease." Dr. Taylor, essayist. Drs. Weaver and Knapp leaders of the discussion.

The subject of May meeting, "Diseases of the Rectum."

DR. LONG'S CASE OF ACROMEGALY.

Dr. Howell, the essayist. Drs. Harry and James leaders of discussion.

Dr. Weaver presented a pendant lipoma removed by him a few hours before.

Adjourned.

MEETING OF MARCH 18, 1891.

Society met at 8 o'clock P. M. There were present: Drs. Faulds, President; Gibson, Secretary; Murphy, Knapp, Kirwan, Clark, Johnson, Long, Stewart, Weaver, Hakes, Fell, Matlack, Taylor, Davis, Howell, Jones, J. H., Roe, Lenahan. Visitors: Lathrop, Ruffner and Geist.

Minutes read and approved.

Committee to Revise the By-Laws, Guthrie, Murphy, Gibson, Taylor and Knapp.

Committee on Health Ordinance reported.

Report was accepted and approved.

The letter of Dr. Foster, Secretary and Treasurer of the Committee on Medical Legislation, Pennsylvania State Medical Society, asking for funds to defray expenses of bill to appoint State Board of Examiners and Licensers tabled at last meeting, was on motion taken up, and after discussion placed in the hands a committee, consisting of Drs. Knapp (chairman), Taylor and Stewart.

Dr. Fell exhibited a specimen of epithelioma of penis, with paper.

Charles Long, A. M., M. D., Wilkes-Barre, Pa., read paper "A Case of Acromegaly." Presentation of patient and photograph.

Symptoms which resemble those of this disease have been grouped together as early as the year 1772, by Sancerotti, and since then various observers have published what were probably cases of this affection under the names, myxoedema, gigantism, exophthalmic goitre, etc. Indeed this group of

symptoms was not classed together as a distinct morbid entity until the year 1885, when two cases came under the observation of Marie, then chief assistant to Prof. Charcot, who made a special study of the affection and described its typical symptoms. In naming it, he selected its most prominent symptom, "a striking non-congenital hypertrophy of the extremities (hands, feet and cephalic extremity)" and called it Acromegaly (akroa extremity, megas, large). Broca describes it as a disease in which "the bones of the extremities and the extremity of the bones are enlarged."

In Brain, July, '89, Marie gives a biographical index of cases which have come under his notice. This includes eighteen (18) cases of undoubted acromegaly, (one of which is Wadsworth's Boston case); four (4) cases, in which details are wanting, but which he classes as acromegaly, and six (6) cases which do not come under the head of acromegaly at all. Since then one European case has been reported by Drs. Holschewinkoff and von Recklinghausen (Virchow's Archiv, January, 1890), and a case is also now under observation in Dublin, but has, as yet, not been reported. In this country the first case reported was by Dr. Wadsworth (Boston Med. and Surg. Journal, January 1, 1885, as a case of myxoedema, but Marie classes it among his eighteen cases of undoubted acromegaly. Adler, of New York (Medicinische Monatschrift, May, 1889), reported a case in a German woman, 34 years of age. The third case was reported by Dr. O'Connor (American Journal of Homeopathy, 1888). The fourth and fifth cases were reported before the Association of American Physicians at the meeting in May, 1890, by Dr. J. E. Graham, of Toronto, and published in the *Medical News*, October 18th, 1890. As near as can be determined, therefore, from the researches that I have made, the case which I have the honor of presenting to the society this evening is the sixth reported case of Acromegaly in America.

Case.—Matthias M., German, age 48, laborer (until 10 years ago). His father was a strong, healthy man, who never showed signs of any special enlargements and died at the age of 65, after a two days' illness. Patient can give no information about his mother, who died when he was an infant. He has two brothers and three sisters living, and he thinks they are all healthy; at least, they have never presented any ab-

normality of growth. The patient's growth was normal, nor did he ever suffer from any sickness during his boyhood or youthful days. At the age of 22 years he entered the German army as a cavalryman, and served three years, until he was 25 years old. At the time he must have been healthy or he would not have been accepted as a soldier. During his service he suffered for five weeks with an abscess on the left hip, but fully recovered. In 1870 he emigrated to America, and was then still a well-proportioned man. Soon after his arrival he was married and lived with his wife for fourteen years. The result of this marriage was three children, two of whom died in infancy, the third is a healthy boy, seventeen years old. About twelve years ago he had a serious abscess, on the right hip this time, from which he also fully recovered. He is sure that he has never had any other sickness, and is free from specific taint. During last summer he suffered for several weeks with headache, but never before or since. He has always been more or less constipated. Symptoms of enlargement were first observed, by the patient's wife, in his hands in 1874, when he was 31 years old, and since that period the hypertrophy has been gradually but constantly increasing. The patient is 5 feet 9½ inches in height and weighs 262½ pounds, an increase in weight of seventeen pounds in twelve years.

Present condition.—The skin has a dirty yellow color, is free from eruption and is very loose, so that it can easily be drawn up in folds. The hands, feet and face are very large, out of proportion to the rest of the body. The face has a distinct elliptical shape so characteristic of patients suffering with Acromegaly.

The cranium is normal in size and shape, and covered with a thick, well preserved crop of gray hair. The forehead recedes from very prominent eye-brows. Neither the eye-lids nor the ears are enlarged. The nose is large and broad. The upper lip is not at all enlarged, but the lower lip is very prominent and everted. The cheek bones are prominent, caused probably by the dilations of the maxillary sinus. The lower jaw is enormously hypertrophied and massive, the chin projecting forward, causing a decided prognathism.

The tongue is very large, thick and wide, and always covered with a grayish-yellow coating. Notwithstanding the

enlargement of the tongue, articulation is distinct. The neck is short, thick and bulky, and the head is inclined distinctly forward, due to a slight cervco dorsal kyphosis. The larynx is not all enlarged. The thyroid gland is smaller than normal, but both lobes can be felt. The voice is strong, deep and not at all discordant. Indeed the patient can sing quite well.

The hands are very much hypertrophied, especially in their width and thickness. There is hypertrophy of the soft parts as well as of the bones, and this is especially true of the ulnar side of the hand, where there is an excessive amount of soft tissue. The lines in the palm of the hand are very marked. The fingers are characteristically stumpy and sausage shape, thick and rather flat. The joints are large and flat, showing that hypertrophy is more marked at the ends of the bones. Flexion is complete and the patient is able to make a tolerably good fist. The finger nails are broad and short. The wrist is thick and enlarged in proportion to the hand. The fore-arm shows some hypertrophy, but the arm is small in proportion to the hand and fore-arm. The muscles of the upper extremity, and indeed, in all parts of the body are flabby and soft. The hand, wrist, foot and ankle of the right side are slightly larger than those of the left side.

The thorax is very large and bulky, especially deep in its antero posterior diameter. There is distinct flattening on the sides. The clavicle and ribs show marked hypertrophy, especially at their extremities. The ribs are inclined very obliquely downward and forward. The scapula is also enlarged. There is a peculiar depression at the upper end of the sternum and no especial prominence of the xiphoid appendage, which is so marked in the majority of the reported cases. There is also no retrosternal dulness; the thymus gland is therefore absent. Breathing is natural. Enlargement of the heart cannot be detected. The pulse is small, soft and compressible. The abdomen is decidedly prominent. There is no enlargement of the genital organs. The sexual appetite, never very strong, is now almost entirely absent.

The thighs are not abnormally large, except the hypertrophy at the ends of the femur. The knee joints are very prominent.

In the legs both the soft tissue and the long bones show

hypertrophy, but that of the muscles is not very marked.

The feet are very large, the increase in size being especially marked in the thickness and breadth. The patient is also flat-footed. The toe nails, like the finger nails, are broad and short. The cutaneous sensibility is good, the knee reflex is normal and the nervous system shows no abnormal symptoms.

Excepting vision the special senses are all normal. The patient is completely blind and has been in this condition for more than ten years. This is, I believe, the first recorded case of acromegaly where blindness is complete. The following is the ophthalmascopic examination, kindly made for me by Dr. L. H. Taylor:

"Matthias M., aet. 48. Acromegaly, 3, 13, '91. Is now totally blind. Does not distinguish difference between daylight and dark. Cannot distinguish bright lamp held in front of him. Pupils moderately dilated. Eye-balls full but not unusually prominent. Left eye, slight divergent strabismus. He has nystagmus of high grade, so that an ophthalmoscopic examination is difficult.

"3, 15, '91. Atropia dropped in diluted pupils and seemed to steady the eye-ball so that an ophthalmoscopic examination could readily be made. Each eye shows chronic optic atrophy, evidently about the same degree in each. Vessels are small and the nerve greenish. Retina not markedly changed. The patient states that he was examined by Dr. Keyser ten years ago for his eye trouble, and pronounced incurable, having, as he states, trouble with the nerve. It is quite possible that the condition of the eye may have been developed independently of the acromegaly, as he has been blind for ten years. He has used tobacco and also alcohol, but he says not to excess. Schilltz (Neurologisches Centralblatt, July, 1889), reports two cases, in one of which the first symptoms of trouble were disturbances of vision ten years before, which in five years developed into complete temporal hemianopsia. At the time the case was reported the patient was completely blind in one eye and nearly so in the other, so that it was probable that a tumor of the pituitary body was present. In Mr. M.'s case there is nothing to indicate a tumor except total blindness, which of course might be due to tumor of the brain, but in such event other symptoms would probably have been manifest."

The patient has the average intelligence for one in his station of life. His appetite for food and drink is not excessive, and patient says this has always been the case.

Urinary analysis was made by Dr. Lathrop, senior resident physician at the city hospital, Urine Sp. Gr. 1028. No albumen. No sugar. Mucus and slight excess of urates were present. The average daily quantity of urine is 52 1-6 oz., but the daily quantity varies from 29 oz. to 84 oz.

In measuring the patient I have followed the plan adopted by Marie, and I have also made use of the metric system, as well as the inch measure, so that comparisou of this patient with others could be made. The measurement of the extremities have all been taken on the left side.

MEASUREMENTS:

Length of hand from lower fold of wrist to end of middle finger . . . . . 210 mm.—8½ in.
Length of middle finger starting from palmar fold to base . 98 mm.—3⅞ in.
Length of middle finger on dorsal aspect, starting from the base of its first phalanx . . . . . 130 mm.—4 7-16 in.
Length of little finger, palmar aspect . . . . . 78 mm —3 1-16 in.
Circumference of hand without thumb at metarcapal-phalangeal joints. . . . . 265 mm. 10 7-16 in.
Width—ditto . . . . . 120 mm 4 11-16 in.
Greatest thickness of hand at level of thenar eminence . . 55 mm. 2 3-16 in.
Circumference of middle finger . . . . . 93 mm. 3 11-16 in.
" " thumb . . . . . 96 mm. 3 12-16 in.
" " little finger . . . . . 80 mm. 3 3-16 in.
" " wrist immediately below extremity of ulna and radius . . . . . 220 mm.—7 11-16 in.
Circumference of wrist immediately below styloid proces of ulna . . . . . 218 mm.—7 9-16 in.
Circumference of forearm at middle . . . . . 305 mm.—12 in.
" " arm at middle . . . . . 331 mm.—13 in.
Length from iliac crest to summit of the head of fibula . 552 mm.—21¾ in.
Length from summit of head of fibula to tip of external maleolus . . . . . 430 mm.—17 in.
Vertical diameter of patella . . . . . 70 mm.—2¾ in.
Transverse . . . . . 80 mm.—3 3-16 in.
Circumference of thigh at middle . . . . . 570 mm.—22 7-16 in.
Greatest circumference of calf . . . . . 453 mm.—17 9-16 in.
Circumference immediately above tip of internal maleolus . 330 mm.—13 in.
Greatest length of foot . . . . . 295 mm.—11 10-16 in.

Circumference over heel and instep . . . . . 423 mm.—16 10-16 in.
Greatest circumference of foot . . . . . 319 mm.—12½ in.
Greatest width of foot . . . . . 119 mm.—4 11-16 in.
Circumference of big toe . . . . . 136 mm.—5 5-16 in.
" " little toe . . . . . 75 mm.—3 in.
Length from top of forehead to tip of chin . . . . . 257 mm.—10⅛ in.
Length from top of forehead to upper part of nasal bones, 85 mm.—3 5-16 in.
Length from upper part of nasal bones to tip of nose . . 85 mm.—3 5-16 in.
Greatest width of alae nasi . . . . . 46 mm.—1 13-16 in.
Distance from tip of nose to point of junction of latter with upper lip. . . . . 35 mm.—1 6-16 in.
Length from septum of nose to point of chin . . . . . 103 mm.—4 1-16 in.
Greatest distance between the outer surfaces of the cheek bones . . . . . 135 mm.—5 5 16 in.
Width of mouth . . . . . 66 mm.—2 10-16 in.
Vertical measurement of lower lip . . . . . 16 mm.—10-16 in.
Transverse measurement at middle of tongue . . . . . 70 mm.—2¾ in.
Length of one of borders of tongue pulled out as far as possible to the upper lip . . . . . 70 mm.—2¾ in.
Lower jaw, vertical measurement from free borders of gum to lower part of symphisis . . . . . 48 mm.—1 14-16 in.
Distance from tempero malar articulation to lower part of symphisis of chin . . . . . 178 mm.—7 1-16 in.
Distance between the angles of lower jaw . . . . . 131 mm.—5 3-16 in.
Distance between angles of lower jaw with tape measure, along body of bone passing in front of symphisis . . . . . 275 mm.—10 13-16 in.
Circumference of thorax over nipple . . . . . 1230 mm.—48½ in.
Antero posterior diameter of thorax . . . . . 359 mm.—14⅛ in.
Circumference of neck betweeu hyoid bone and upper part of thyroid cartilage . . . . . 440 mm.—17 5-16 in.

(Where there was a projecting body between two points of measurement callipers were employed so as to be accurate.)

There have been so few cases of acromegaly reported that it would be difficult to describe all the typical symptoms, no two cases being exactly alike. The elliptical shaped face and the hypertrophy of the hands and feet, however, have been present in every case.

There is a notable absence of subjective symptoms in Mr. M.'s case. He has suffered slightly with headache, has had two abscesses, and has lost the sexual appetite. He is also completely blind; but Dr. Taylor's report would lead us to infer that the blindness is due to causes distinct from the

acromegaly, while he recognizes the possibility of its being caused by hypertrophy of the pituitary body.

There is no constant headache, no polydipsia, polyphagia, or polyuria. The thymus gland is not present, and there are no varicose veins; all of which symptoms have been present in the majority of patients.

The etiology of the disease is unknown. Several of the patients have been syphilitics, but whether this has any effect upon the causation of acromegaly is doubtful. There has never been any proof of heredity.

Acromegaly occurs with about the same frequency in both sexes. It first appears between the ages of 20 years and 30 years; is very slow in its progress, lasting 20 or 30 years or more.

Little is known regarding its morbid anatomy. Marie (Brain, July, '89,) in concluding his description of acromegaly says, "That hypertrophy of the pituitary body with enormous dilatation of the sella turcica, persistence of the thymus, and finally hypertrophy of the cord and ganglia of the sympathetic system not only occur with a remarkable degree of frequency, but may even be looked upon as constant."

That these conditions are not always present is proven in the case reported by Fräntzel (Deütsche Medicinische Wochenschrift, '88,) and on which an autopsy was performed a year later by Virchow (Berliner Klinische Wochenschrift, February 4, '89). Virchow noted absence of the thymus gland, and a normal condition of the thyroid and pituitary glands.

Broca (Archives Generales de Medicine, December, '88,) describes the skeleton of one of the original cases of acromegaly by Marie. "The principal change found was an hypertrophied and increased porosity of the bones of the extremities and enlargement of the channels containing blood vessels. There were also exostoses at the articular extremities of the bones. The inferior maxillary bone was greatly hypertrophied, and all the sinuses in the bones of the skull were dilated."

*Diagnosis.*—The case presented cannot well be confounded with any of the diseases which resemble Acromegaly.

In myxoedema the soft parts alone are affected. The skin is thickened and scaly, and both it and the subcutaneous cellular tissue present a waxy like condition. The face is

round and the mental condition is bad. The skeleton, on the other hand, is unaffected. The symptoms are all absent in the patient presented.

The Leontiasis ossea of Virchow gives rise to bony tumors on the face and cranium, causing a hideous appearance and great deformity.

Osteitis deformans of Paget generally manifests itself after forty years, whereas Acromegaly appears from ten to twenty years earlier. The deformity does not occur symmetrically, as it does in this patient, and hypertrophy affects the long bones in preference to the bones of the extremity and the extremity of the bones. The long bones also present marked deformities. The bones of the cranium also undergo hyperostosis instead of the bones of the face, giving the latter a triangular and not an elliptical shape.

In gigantism all parts are proportionately enlarged, there being no special hypertrophy of the lower jaw, hands and feet.

Marie will not admit that Friedrich's disease, in which hypertrophies occur somewhat similarly to those of Acromegaly, has any connection with this disease, and also will not allow it to be confused with unilateral hypertrophies, which sometimes occur in different parts of the body.

Treatment has had no effect upon the progress of this disease. In the present case there has been no attempt at treatment.

My thanks are due to Dr. G. W. Guthrie for allowing me to observe the patient in the City Hospital; Dr. L. H. Taylor for the ophthalmascopic examination, and Dr. Lathrop, (Resident of the Hospital), for the urinary analysis.

## MEETINGS OF APRIL, MAY AND JUNE.

The meetings for the past quarter, on the first and third Wednesday of each month, have been well attended. The change of hour to 8 o'clock p. m. is an improvement on the former time of holding meetings, and the cozy rooms of the society, well furnished, lighted, ventilated, and supplied by the members with medical periodical literature, are a sure attraction.

The following papers have been read and discussed.

## CASES AND TREATMENT OF MASTOID DISEASE.

By LEWIS H. TAYLOR, M. D., Wilkes-Barre, Pa.

[Read April 15, 1891.] *

*Mr. President and members of the Luzerne County Medical Society:*

Instead of attempting to prepare an elaborate paper on the subject of "Mastoid Disease," as assigned me, it has seemed to me preferable and more suited to our purpose, if I should deal briefly with some of the practical points of the disease only, and rehearse a few cases from my own observation, hoping thereby to elicit from members present a full and free discussion on this painful and oftentimes dangerous disease. I have taken the liberty therefore of changing the title of the paper, and shall pass over entirely any description of the anatomy of the parts affected, merely recalling to your minds the close association of the mastoid cells with the middle ear; the passage from one to the other, as you well remember, is frequently almost uninterrupted. This anatomical relation accounts for the readiness with which the inflammation of a chronic or even an acute otorrhœa passes over to the mastoid in some people.

Primary mastoiditis is an exceedingly rare disease; in an experience of several hundred cases of ear disease I have never yet seen a case of it. Dr. Cornelius Williams of St. Paul reports in Archives of Otology, vol. xiii, a case which was cured by applications of ice. There had however been a history of recurring earache for many years, and it seems to me that this

*Official report. Dr. C. P. Knapp, editor.

may have been a case secondary to old trouble previously existing in the ear.

Dr. David Webster in vol. xiii, Archives of Otology, reports three cases of inflammation of the mastoid cells without any appreciable inflammation of the middle ear. He says: "Although in the majority of cases there is no doubt that the inflammation extends from the posterior nares along the eustacthian tube, through the middle ear into the mastoid cells, yet there is no good reason for believing that the inflammation cannot in the nature of things originate in the mastoid cells themselves and travel perhaps in the opposite direction."

Dr. Swan Burnett, Dr. F. Tilden Brown, Dr. Roosa and others have reported cases, but all consider such exceedingly rare.

There are, roughly speaking, three grades of mastoid disease: periostitis, abscess, and caries.

The first named probably constitutes the largest portion of the cases, and many others which are allowed to develop serious and sometimes fatal complications, if properly treated, would be cut short at this stage. The dangers which result from neglected cases are of so grave a nature, that every practitioner should be on his guard to prevent the development of such dangers.

While such usually fall to the lot of the specialist in our large cities, the disease is nevertheless one which the general practitioner is quite apt to meet and one which he must often master without any assistance or advice from others, and it has seemed to me, therefore, a proper subject for discussion by this society. I am firmly convinced that a proper treatment of the acute affection preceding the mastoid disease and a prompt resort to Wilde's incision in doubtful cases, would relieve the majority of them and prevent the disastrous consequences that too often follow when the "let alone" treatment is pursued.

The disease, as we meet it in practice, is almost always associated with and the direct result of suppurative otitis, either acute or chronic, and since this is true it behooves us to treat intelligently and promptly every such case that comes to our notice, and not, as is too often done in the case of children, say to the parents: "Oh, just syringe it a little with warm soap suds and he will probably outgrow it." The evils that

have resulted from the "outgrowing" process in ear diseases, are incalculable.

For an elaborate paper I should properly discuss the causes and symptoms of otitis media, but the limits of our time forbid, and as we wish to deal mainly with the practical aspect of the subject I will pass over this portion entirely as I well know it is only too familiar to every practitioner of medicine.

What shall we do then to prevent mastoid disease? When called to a case of acute suppurative otitis we should treat it partly as we would treat threatened suppuration elsewhere, remembering only the necessity for greater vigilance and more energetic measures, owing to the anatomical relations of the parts involved. Leeches should be applied in front of the ear, and if there be any pain over the mastoid, two or more leeches should be applied here also. Hot fomentations should be used and warm water gently instilled in the ear; but above all as soon as we are convinced that pus has formed in the tympanum, which can generally be determined by inspecting the bulging membrane, we should resort to paracentecis and not wait for the membrane to rupture spontaneously. Then by inflation through the eustachian tube expel so much of the contained pus as possible and continue the application of heat and moisture, with opiates to relieve pain as necessary. I have found the instillation of a half dozen drops of a four per cent. solution of cocaine in Magendies' liquor morphiæ every two hours to be of value, though I have not found the solution of cocaine alone as recommended in earache of much service. Any drops put in the ear should always be previously warmed.

Of course in recommending this treatment I am considering the cases as they are usually presented to us, that is from twenty-four hours to several days from the time of their inception. Seen at the start many cases of incipient otitis could without doubt be successfully treated by applications of ice.

Very often a threatened case of mastoid disease may be aborted by a timely puncture of the drum membrane and thorough inflation of the eustachian tube and tympanum.

I was called some years ago, through the courtesy of the President of this Society, to see a patient which well illustrates the above statement. The patient was a robust, vigorous man, who had been suffering for some days with severe inflammatiou of the middle ear, with great tenderness and swelling over the mastoid, high fever, intense pain, almost

delirious and apparently threatened with an acute attack of meningitis. All appropriate remedies had been used and it was now deemed advisable, as the membrane was still intact, to puncture it, and if the symptoms did not soon abate then to perform Wilde's incision and later, if necessary, trephine the mastoid. Examination revealed a bulging membrane almost ready to burst, evidently confining pus within the tympanum. A paracentecis was quickly performed, followed by an outpouring of pus. The ear was syringed with warm water, eustachian tube inflated and the same repeated as needed. The symptoms of meningitis and of mastoid disease quickly subsided and the patient made an excellent recovery.

A very similar case in a young man of twenty-three, was promptly relieved by the same procedure. I have had occasion to perform this operation on several occasions and always with beneficial results and never with any ill effects.

Very frequently, however, we do not see such patients until there has been suppuration with perforation of the membrane, and foul discharge existing for many days and often for weeks and months. Sudden exposure to severe cold or other cause, lights up the sluggish inflammation and patients come to us with all the symptoms of mastoid and threatening abscess of the deeper tissues. Even then, the resort to leeches, poultices, hot douches, etc., will sometimes relieve the patient without operation, as the following case illustrates :

Mrs. M., of Miner's Mills, came to me May 30, 1887, with hearing for the watch right ear normal and left ear not even in contact. The left ear was discharging offensive pus. She was suffering great pain, had some swelling and tenderness over the mastoid and gave a history of suppuration lasting two weeks. I thoroughly cleansed the ear with warm water, used Politzer inflation, applied boracic acid freely and recommended similar treatment to be repeated daily. On June 1 the discharge continued with mastoid symptoms aggravated. I now recommended leeches ; these gave relief but it was only temporary. After continuing treatment about a week, I advised an operation intending to perform Wilde's incision. She objected to this and wished to try the leeches again. I consented. After a few more trials without permanent relief, she agreed to an operation and I was to go to her house the next day and perform it. She sent me word on the morning set for the operation that she was somewhat better, would like to delay and continue leeches. This she did off and on through June and early July, using in all twenty one leeches. She improved and relapsed several times but finally recovered without the operation. By July 25, the swelling and tenderness fo

the mastoid had entirely subsided and suppuration from the ear had ceased. Hearing distance in the affected ear was two inches, and as the other was normal she regarded herself as entirely well. I have no doubt she has further improved, but I have not seen her since.

I have had several other cases in which the use of leeches and poultices rendered an operation unnecessary, though I believe in the one above recorded as well as in some others, a free incision over the mastoid would have saved many days and nights of suffering.

The incision proposed by the celebrated Dublin surgeon and bearing his name, is one that can be safely employed in such cases and which should in my judgment, if cases come under our care early enough, always precede the operation of trephining or chiseling the bone.

Wilde's incision should be made about a half inch back of the attachment of the auricle and parallel to it and should extend fully an inch and a half in length from the tip of the mastoid process upward. It is usually recommended that the cut should be made from below upward so as to avoid slipping the knife into the tissues of the neck. I have performed the operation several times, and always from above downward, never having any difficulty in stopping at the desired point. It is also recommended to carefully select the distance from the auricle so as to avoid wounding the posterior auricular artery, but this is a matter of small account, for if wounded the hemorrhage isof advantage in relieving the congested tissues and it can be readily controlled by pressure when desired. Especial care must be taken to divide all of the tissues down to the bone as the pus is often found directly under the periosteum, and it is surprising to what depth the knife must sometimes be entered through the swollen tissues before the bone is reached. In the following cases which I will briefly relate, the result of the operation was all that could be desired, and while as I stated above I believe that the majority of such cases could be relieved by Wilde's incision, I do not mean to convey the impression that the more difficult and dangerous operation of opening the mastoid can be always avoided.

Case 1.—Mrs. A., suffering with chronic otorrhoea, which had within a few weeks past become complicated with mastoid disease. She had been treated for some time without improvement and the ear was discharging pus at the time of her visit. As the secretion was already rather free I began the usual treatment of hot applications, leeches, etc., but these were of but

little avail, and as her suffering was increasing with all symptoms aggravated I proposed in a few days, an operation. A free incision an inch and a half long, was made under ether, but brought nothing but blood. Hot poultices were applied and the next day pus appeared in the incision. These continued, with cleansing and drainage of the wound relieved all symptoms and she speedily recovered.

Case II.—A young man of twenty-five, a strong, hearty miner, from exposure to cold had contracted an acute otitis media for which he was properly treated by his family physician a week or more. When I was called to see him, symptoms of mastoid disease were so prominent that I at once advised operation. His suffering was intense and not relieved by opiates. Assisted by Dr. Miner who gave an anaesthetic, I cut down through the tissues more than an inch in depth, cutting at the same time the artery which spurted freely. The hemorrhage was readily controlled by pressure. In this case also, although the tissues were freely divided, there was no pus. Poultices were applied and the next day I found him much easier. Upon entering a blunt probe to the bone and simply breaking up the adhesions of the cut, the pus welled out abundantly. The symptoms rapidly subsided and he had an uninterrupted recovery.

Case III.—Was a man aged about fifty, whom I saw in consultation and then took charge of at the request of his attending physician. He had had earache for some weeks with discharge of pus which had now stopped. At the time of my first visit he had much swelling and tenderness over the mastoid with deep seated pain extending to the whole side of his head. He was first treated with poultices but these had been discontinued and ice applied. There was evidently pus already formed under the periosteum, but the operation was delayed a day or two at the request of his physician to try the effect of poultices again. At the end of two days I performed Wilde's incision, without assistance and, as he was a plucky man, without anaesthetic. The pus at once discharged freely and, as the artery was cut, the blood also, but this was readily controlled by pressure. He stated that the pain of my finger pressing the artery was worse than that caused by the cut. He had been suffering for many days and nights, unable to sleep and was on the border of delirium, but from the time of the operation on the symptoms rapidly subsided and he quickly recovered with a fair amount of hearing.

Case IV,—I will relate a little more in detail as it illustrates the tendeney of the disease in some persons, to subside and then from slight causes to be relighted. Miss W., aged 23, was seen at her house Dec 20, 1889. She was suffering intense pain in the left side of head, referred especially to the left ear. Watch could not be heard even in contact on the affected side. She stated that she was first troubled with earache early in November and was

obliged to discontinue her occupation for four days. Her physician gave her drops for her ear, she got better and resumed her duties but could not hear.

There was also a swelling back of the ear at the time, to which she applied a paint under the doctor's direction. She had another attack of pain right after Thanksgiving and got better. Then again on Dec. 18. She went to Music Hall in the evening of Dec 19, and returned home with the earache and now Dec. 20, has severe pain over the left side of her head, in left ear, and particularly over the mastoid. She has been taking morphine pills but they do not relieve her. Mastoid region is swollen and somewhat edematous. Pulse 100, temperature 102. I used syringe and Politzer's inflation, making hearing two inches, and ordered two leeches to the mastoid, to be followed by poultices.

Dec. 21, considerable pain through the night but now much better. Ordered Sulphide of Calcium gr. 1-10 every two hours.

Dec 22, patient sent word in the evening that she was suffering intensely and I gave Chloranodyne, thirty drops, to be repeated as necessary.

Dec. 26, I gave Quinine, as she seemed to be worse on alternate days, and also biniodide of mercury gr 1-16 three times a day.

Dec. 29, she was somewhat easier, but still in bed, the swelling somewhat less. I had used syringe and Politzer daily and there was but little discharge from the ear. I had told her an operation would probably be necessary.

By Dec, 30, I was sure there was pus under the periosteum and urged an operation but her friends wished to avoid it if possible. On Jan. 2, as she was still unwilling for an operation, though suffering greatly, I left telling her to send for me when ready to be operated on as I would not return otherwise.

She notified me Jan. 4, of her willingness, but I could not operate until the next day when, assisted by Dr. Barney, who gave the ether, I made a free incision a half inch back of the ear and down to the bone. Pus ran out in large quantities. The wound was syringed with an antiseptic solution, a tent inserted, and poultices continued The next day she was free from pain and continued to improve steadily. By Jan. 10 the hearing distance was four inches and she was able to get up. By the 17th she was able to come to my office, hearing 12 inches, swelling and soreness all gone. By Feb. 1 she was entirely well and hearing in right ear normal, left ear eighteen inches.

In this case the tissues of the neck were much swollen before the operation and I greatly feared that pus would burrow from the mastoid, setting up a condition that would require months for its recovery.

The question may naturally be asked, why will so simple a procedure relieve so serious a disease? It seems to me that

in all of those cases in which there is great swelling and tenderness over the mastoid, there is a tendency of the inflammation toward the surface, and perhaps in such cases the mastoid is more porous than in others. A free incision, by depletion of the vessels alone greatly relieves the acute symptoms, and by relieving pressure, encourages the pus to break through the outer shell of bone, which in many cases has already become abnormally thinned by the inflammatory process. In others the pus has already accumulated beneath the periosteum and only needs the incision to free it and prevent its burrowing into the tissues of the neck.

There are, however, many cases of a severer grade of the disease which the incision of Wilde will not relieve and we must then resort to the more serious operation of opening the mastoid. Politzer says: "If we find the periosteum and cortex unchanged after Wilde's incision, and there is no abatement of pain experienced after one or two days, then it is almost certain that an abscess is situated in the interior of the mastoid process and surgical operation becomes necessary.

Dr. F. C. Hotz, of Chicago, in a very interesting article in volume ix of Archives of Otology, strongly recommends an early operation for opening the bone in mastoid disease, and objects decidedly to the delay suggested above.

If, upon making a Wilde's incision the periosteum and bone beneath are found but little changed and pus is not at once reached, he proceeds immediately to open the mastoid. He favors this plan for the following reasons:

1. It abridges the suffering of the patient.
2. It saves the disappointment of an unsuccessful operation, and subsequent resort to a second.
3. It shortens the course of suppurative inflammation.
4. It arrests the disease before it becomes dangerous to life.
5. It enhances the possibility of restoring a useful amount of hearing.

The operation has not in past years been a popular one and has been usually undertaken as a last resort. No doubt if it were performed earlier the percentages of favorable results would be higher, and partly perhaps because many cases would undergo operation that would have recovered without it. In 1873, Dr. A. H. Buck could record but thirty-one operations, with twenty-three good results and in the remaining eight

fatal cases, death could be attributed directly to the operation in only one.

It has grown in favor since then, and with the advent of antiseptic surgery the results are regarded as much better.

Dr. Chas. Knapp, of this society, reported a case in *Philadelphia Medical Times*, February, 1879, in which the patient had had earache since September, 1877. In June, 1878, there was perforation of drum head; blister over the mastoid was ordered. On July 4, there was purulent discharge from the ear, with great pain and swelling over the mastoid. Perforation of the cells was now resorted to and two drams of pus evacuated. Bone was denuded of periosteum and soft. The wound closed and had to be re-opened, but a successful result was finally obtained, with hearing distance for watch at eight inches.

The operation is by no means devoid of danger, and while many lives have without doubt been saved by it, on the other hand many deaths have been reported following the operation and in some cases as the direct result of it. The dangers most dreaded are wounding the lateral sinus, and breaking entirely through the diseased bone into the brain itself.

Having decided in any case that the mastoid must be opened, how shall we proceed to accomplish it? It is entirely unnecessary for me, in this presence, to enter into all of the details of the operation, the antiseptic precautions to be taken, etc.; suffice it to say the general principles which we now all employ in any surgical case should not be here neglected. As to the instruments to be used, they are few; as to the instruments suggested, they are many. The late Dr. Strawbridge, of Danville, a few years ago reported cases in which he had opened the mastoid with an ordinary gimlet, purchased, in the absence of a better instrument, at a neighboring store.

The trephine formerly in vogue, was practically superseded a few years ago by ordinary drills, and these in late years by the hammer and chisel, which are now regarded by most operators as the safer instruments to be employed.

Elaborate directions are given in some treatises as to the proper location of trephining or chiseling point. It may be said in general that it is about on a level with the superior wall of the external meatus and one inch behind it. Mitzkuner, in the *Wiener Klinische Wochenschrift*, suggests that

the point at which trephining or chiseling the mastoid process should be commenced may be safely determined thus: "By drawing the ear forward a fold is formed immediately behind the auricle. Beneath this fold there is a flat bony prominence. A depression will be found between this prominence and the base of the mastoid process. This area should be chosen for the operation, because—

1. A chisel can descend safely from ¼ to ⅓ inch.
2. The transverse sinus which varies its course in different individuals never touches at this point."

The only objection to the selection of this areas is the possibility of puncturing the external auditory canal—a danger which is nothing in comparison to that of injuring the transverse sinus.

In cases which progress favorably the time of healing varies greatly from one week to several months, while in some a permanent fistula of the mastoid results.

The third grade of the disease, caries of the mastoid, ought to be rare, and yet we sometimes see it.

I have at present under treatment a little patient eight years of age, who has gone through all of the grades of ear and mastoid disease, and who has by no means recovered, although under observation for several months. The was taken ill nearly a year ago and had scarlet fever and diphtheria followed by ear and mastoid disease. She was in a neighboring state at the time of her illness and unable to return for many weeks. When she came under my care in Oct. 1890, both cars were discharging greenish pus, the left mastoid had opened spontaneously and was discharging in three places. The left ear was partly filled with polypi. She was very anaemic and her condition generally was bad. After treatment for some time I advised administering an anaesthetic for the purpose of removing the polypus and of enlarging the openings over the mastoid. I removed the growths from the ear and made a free incision over the mastoid an inch and a half long. The knife entered readily into a cavity of carious bone. This I scraped freely with a curette and dressed antiseptically. The since improved greatly but is not well. In syringing the left ear the liquid flows out freely through the mastoid openings as if the latter were thoroughly riddled. Her general condition under the use of tonics is fairly good and I trust she will eventually recover, though the prospect for hearing is not bright.

Another case of caries of the mastoid, which I saw after it had existed some months, died in the city hospital of meningitis about a week after operation.

Dr. Thomas Pooley in vol. ix, Archives of Otology, reports

a case of chronic caries of the mastoid, operated upon and followed by death. The operation should be performed by a curette or gouge, scraping away all of the diseased bone and afterward dressing with the usual antiseptic precautions. Such cases are usually found in strumous subjects, hence a liberal use of cod oil and other tonics is advisable. The condition is a serious one and the results of treatment not brilliant. The dangers attending an operation however should not deter us from its performance ; but where opportunity of treating our patients in the inception of their trouble is given, we should endeavor to so manage the same as to render this serious complication a matter of very infrequent occurrence.

I feel that I ought to apologize to the Society for this hastily prepared and somewhat rambling presentation of a very important subject. It does not pretend to be a thorough paper on mastoid disease, but I have desired rather to present what seemed to me the practical side of the subject and thereby elicit from others a free discussion of the same.

DISCUSSION.

Dr. Murphy—I am a believer in Wilde's operation; performed it frequently and always with happy results. I have found the peroxide of hydrogen the most useful local treatment in these cases.

Dr. Barton—I have opened the mastoid process with a gimlet in one case. Have several times practiced incision with good result.

Dr. Weaver thought the diagnosis was often obscure, pain often being present for quite a long time before other symptoms point to the presence of pus.

Dr. Murphy said, deafness, pain and swelling, call for leeches and poultices, and if relief be not afforded the incision should then be made.

Dr. Kunkle—I have seen several cases of mastoid disease within the last few months. Have practiced incision successfully. I saw one case with the history of mastoid disease where the bulging extended down to the neck. Upon incision two ounces of pus was evacuated.

Dr. Faulds thought Wilde's operation and trephining were both quite common now. He had never used leeches in the treatment of this disease, but believed that he had aborted cases by the use of blisters.

Dr. Taylor, in closing discussion, gave a history of the operative procedures. He said so late ago as 1883 the propriety of trephining was questioned by a large number of otologists. At the present time free incision and trephining when necessary are in universal favor. The diagnosis he admitted was often obscure. Tenderness and pain extending over side and head, and long continued, were good indications for operation. He had used the per oxide of hydrogen in otitis media with satisfactory results. He thought the most important thing was to *prevent* mastoid disease by attention to cases of ear disease.

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## FISTULA IN ANO.

By J. T. Howell, M. D.

[Read May 8, 1891.]

*Mr. President and Gentlemen:*

In choosing this subject for this paper I thought it would be of interest to the society to have a paper on some disease of the rectum, not that I can add anything new on the subject or present a very elaborate paper; but by presenting some cases that came under my personal observation with the literature of the subject, it might bring forth a discussion that would be of benefit to the members of the society.

With a mere mention of hemorrhoids, the society having had an excellent paper on that subject several years ago, I will confine myself to the disease fistula in ano, with a slight reference to a case of ulcer of the rectum. A knowledge of the anatomy of the rectum will not come amiss; it may freshen up the memory of the members as it did that of the writer's while studying up the subject. At the risk, therefore, of being a little tedious, I will briefly review the most important points. The rectum is the terminal part of

the large intestine and extends from the sigmoid flexure to the anus; it varies in length from six to eight inches, terminates in the ischio-rectal region and presents in the middle line the anal aperture. The rectum is not straight; the upper part comes obliquely from the left side to the median line, the middle portion curving in the direction of the hollow of the sacrum, and the lower portion curving in the opposite direction. It is narrower in its upper portion and gradually increases in size as it descends, and is capable of acquiring an enormous size immediately above the anus. The integument is of a dark color continuous with the mucous membrane of the rectum. The veins around the margin are occasionally much dilated, forming a number of hard pendant masses of a dark blueish color, covered partly by mucous membrane, and partly by the integument, constituting the disease called external hemorrhoids, consisting essentially in an extravisation of blood into the cellular tissue of the part, caused by the rupture of a hemorrhoidal vein; as the effused blood always speedily coagulates, the tumor soon becomes hard and painful, but after being incised the contents roll out, being a solid mass of a dark purple color, much to the relief of the sufferer.

The muscles are the external and internal sphincter; the external consists of two plane of muscular fibres which surround the margin of the anus, and join in a commissure before and behind. The internal is a mnscular ring about a half inch in breadth, which surrounds the lower extremity of the rectum, about an inch from the margin of the anus. The rectum is supplied with the hemorrhoidal nerve, artery and vein.

Having given a brief review of the anatomy of the rectum I will consider one of the most freqnent disease of the rectum, fistula in ano, or an abnormal tract extending from the rectum to the surface of the skin, occuring in all periods of life, but is more common in adults and elderly persons.

One of the immediate causes of fistula is an abscess in the neighborhood of the anus by which the lower bowel is not only more or less extensively detached from the surrounding structure but perforated at times in such a manner as to admit of the ready passage of gas, mucus and fecal matter.

The integument of the anus is also provided with numerous follicles, which occasionally inflame, and suppurate and

if allowed to repeatedly inflame and suppurate it will no doubt form an incomplete fistula. I also had a fistula occur after an operation, ligating hemorrhoids, which healed kindly after laying open the fistulus tract.

The causes of abscesses which end in fistula are many and various: for example, injury to the anus, injury to the mucous membrane of the bowels by constipation, straining at stool, foreign bodies swallowed, exposure to wet and cold, scrofulus diasthesis, and certain depraved conditions of the blood, such as frequently give rise to boils and carbuncles. A rectal abscess may rise rapidly, when there will be redness, tenderness and often very acute pain, with constitutional disturbance; or it may be some time in forming and be painless. This form of abscess is the most dangerous, as it is apt to be neglected, it has better tendency to open spontaneously, and it burrows up by the side of the rectum to some distance as well as under the skin toward the perineum or buttock. I well remember a case of this kind which came under my care in 1885.

Mr. G. came to my office complaining of a fullness in the region of the anus, which had given him pain for some time. Upon examination I found it to be an abscess, which I opened and from which some pus discharged, and thought without doubt that my patient would then be cured; but such was not the case. Owing to the extensive destruction of the tissue the abscess failed to close, and there remained a large sinus, extending two or three inches or more along the course of the rectum, forming an incomplete fistula. After etherizing my patient, and freely laying open the sinus, confining him to bed for some two or three weeks, at the same time packing the sinus every day, he was able to attend to his occupation as a tinner, but it was nearly one year, by constant attention on my part, before the sinus was completely healed, so as to allow him to be free from pain, not only in a sitting position, but also when having an evacuation from the bowels. Up to this time he has not had any trouble or pain from the original cause.

According to most writers the most usual course is for an abscess to form rapidly, with great pain and if not interfered with to burst externally, the patient then becomes suddenly relieved and fancies his trouble is over. The cavity of the abscess seldom entirely closes, but sooner or later it contracts leaving a weeping sinus, with a pouting papillary aperture, which may be situated near to or far from the anus. It may happen that we do not always see a rectal abscess in its early

stages, either the patient is not aware of the importance of attending to the first symptoms or he temporizes, using fomentations or poultices, or he may call upon a physician to relieve him of some concomitant trouble.

Such a case came under my observation in October, 1890. I was called to see Mr. McC., a stationary engineer, who used compressed air instead of steam, which made the temperature of his engine room very cold. I found him suffering greatly with retention of urine, and at the same time complaining of pain in the anal region, but I did not find at the time any tumefaction. After relieving him of his retention of urine and instructing him how to use the catheter, ordered hot poultices applied over the seat of pain, and in twenty-four hours detected deep seated fluctuation. I immediately cut down and let out as much foul smelling pus as would fill a large cup. Had this been neglected the result would no doubt have been serious. I sponged out the cavity of the abscess with a solution of hydrogen per oxide, night and morning, which boiled out every particle of pus, leaving a clean surface, which soon closed and left the patient in a sound condition. I had occasion to see Mr. McC. recently and he tells me he has not experienced the slightest trouble or pain in the anal region.

The question naturally arises why do these abscesses usually fail to close? Why do they form sinuses? The several reasons given by writers and which are self evident, are the mobility of the parts caused by the action of the bowels, and movement of the sphincter muscles at almost every breath, and the presence of much loose areolar tissue and fat. The vessels also near the rectum are not well supported and the veins have no valves, there is therefore, tendency to stasis and this is enimical to rapid granulation.

Besides this common form of fistula there are two others deseribed: The blind external fistula and the blind internal fistula. The former has an external opening, and the latter the reverse. The blind internal form of fistula generally results from some injury or ulceration of the lining membrane of the rectum, and is found in persons predisposed to consumption. The blind external form of fistula which some writers claim cannot exist owing to the inability of finding the internal opening. They often occur as I have mentioned by repeated inflammation of the fallicles around the margin of the anus, which by repeated suppuration, grow deeper until they reach to the depth of an inch or more and form a blind external fistula. A case of this kind of blind external fistula resulting from this cause came under my observation some

time ago. The patient having had repeated inflammation of two of the fallicles, which were thought to be small boils, and which broke and discharged their contents, only to be repeatedly inflamed and to suppurate, and when seen they had reached to the depth of an inch and a half, which demonstrates that the longer a fistula is left, the more does it burrow, and the more difficult it is to cure.

The most simple operation for the cure of anal fistula is a division of the superimposed structure with the knife passed along a grooved director previously inserted into the abnormal tract, its extremity being brought out at the anus and placed against the opposite buttock, always at right angles to the fibres of the muscle. When the fistula is short it can be divided without the grooved director, and when there is no internal opening one has to be made into the bowel at the usual height, with a sharp pointed director, and the part divided with the knife. After dividing the parts, a thin tent, well oiled is inserted into the wound, and carried up the bowel to insure its retention. The dressing is renewed daily until the wound is well covered with granulations; but it is well not to meddle too much with nature to have the parts restored. In fact, it is better to do too little than too much, which was fully demonstrated in a case of rectal ulcer, which was under my care this winter, of at least one and a half inch by an inch in extent, which was freely divided, entering the knife at a half inch from the edge of the anus, carrying the cut clear past the upper margin of the ulcer. This wound was not dressed at all after removing the dry cotton which was placed in the wound after the operation. The cut healed kindly with the exception of a small granular polypus, which formed during the healing process. After its removal there was no more trouble, the patient having complete control of his sphincter muscles and having the gratifying result of healing the ulcer which had baffled all other treatment.

It is never well to operate upon a fistula while there is any acute inflammation. Fresh sinuses are likely to form, and your operation is sure to be a failure. Fistula can also be cured by some stimulating injection, such as iodine, zinc, nitrate of silver, Friars Balsam and sulphate of copper, but according to Gross the occurrence is so uncommon, that one will seldom be induced to waste the patient's time by trials of this kind. Yet Allingham relates quite a number of cases of

spontaneous cures, simply by passing the probe, which set up enough inflammation to obliterate the sinus : but still, he says, the bulk of the so-called spontaneous curse are illusory, the disease returning in time, and in his opinion there is nothing equal to the incision of the fistula and getting it to fill up soundly from the bottom.

Although it may be a very simple operation to lay open a fistula with the knife and a grooved director, yet one failure takes away all the glory of your successful operations, which it was the misfortune to happen the writer.

A patient who suffers from inability to retain flatue or feces is in a most unpleasant condition, in fact some sensitive persons would not undergo any operation which was at all likely to induce such a state, and would prefer any physical suffering rather than the perpetual fear of being in any way offensive to others, and I think it is well at all times before operating to place the good and evil before him, so if you should happen to have a bad result, you can to a certain extent, exonerate yourself from some of the unpleasant feeling, which is bound to exist in that patient toward the one who has operated upon him. Fistulas can also be treated by the elastic ligature, and Allingham who seems to be one of the best recognized authorities, uses solid india rubber, very strong, and drawn as tightly as can be, fastened with a clip. The average time it takes to cut itself through is about six days, and he claims it causes very little pain if properly applied. The patient can walk about without danger, also after the ligature has cut itself through the wound is often very nearly healed, and in phthisical cases it offers the best means of dividing the sinus.

Dr. Stephen Smith, of New York, published an article in the New York *Medical Record* of June, 1886, on the immediate closure and rapid cure of fistula in ano, which has been successfully performed in this country by Drs. Emmett, Wier, Lange and Chamberlain of New York, by Dr. Jenks of Chicago, and by several surgeons abroad, in most instances without the knowledge of the work of other operators. Dr. Smith was impressed with the idea while reading Dr. Emmett's work on lacerated perineum, involving the sphincter ani, and it seems very reasonable. I well remember a case of lacerated perineum, occurring in my own practice, where the laceration involved the sphincters, and where the patient had

no control of her bowels, and was an object of pity, but after operating on her for lacerated perineum it restored the function of the sphincters; she was, after the operation, a very grateful woman. And so in our unsuccessful cases, which resist the old method and fail to heal or there remains a troublesome defect in the action of the sphincters, it would seem to me to be just the kind of an operation one would be called upon to perform.

Dr. Smith goes into considerable detail of the operation, but the essential points are, antiseptic precaution, the lining membrane to be carefully dissected away, the ragged margins of the wound cut away so as to leave a clean and healthy surface for opposition and union; to obtain prompt union it is necessary to evert the edges of the mucous membrane and bring the deeper cut surface in contact. The success of the operation depends upon securing complete and firm closure of that portion which involves the mucous membrane. According to his experience fistula in ano can be cured by this operation in a period varying from eight to fourteen days.

In this advanced age of surgery, knowing the liability of having the sphincter muscles lose their contraction power by the old method of dividing the fistulous tract, one would be very apt to perform the above operation.

The existence of fistula in ano, complicated with phthisis, opens a large and interesting subject. An anal fistula may exist in phthisical patients without either disease becoming immediately complicated; sooner or later however they may become involved to such an extent that neither can be cured. Reading an extensive article on this subject, I find that the early writers make no allusion to the disease being in any way connected with phthisis, the more modern writers consider the phthisis in the light of a cause instead of a consequence of the anal fistula, and the writer says it is an established canon of surgery that in order to cure an anal fistula it must be cut—that is, divided with the bistoury; and it is also equally a law of surgery, that when an anal fistula is complicated with phthisis it must not be cut, but let alone.

DISCUSSION.

Dr. Murphy—This is one of the most frequent affections of the rectum. I have been much interested in listening to the

paper. I believe also that the most effectual means of cure is the knife. I have had some experience in blind fistula. I have operated in two cases, slitting up the fistula for some inches, but they did not heal and subsequently had to be operated on by communicating with the rectum. I believe this to be the better plan at the first. Speaking of diseases of the rectum I am reminded of a case recently seen of villous tumor of the rectum. A broad base which I pierced with double ligature, ligated and removed. Never returned. Danger of such degenerating into cancer. I think we are not careful enough in examining patients with disease of rectum. We are apt to prescribe upon the patient's description of the case, whereas all troubles of the rectum should be thoroughly examined.

Dr. Stewart—I treated a case of hemorrhoids a few weeks ago. An old lady who had suffered with hemorrhoids many years had two on each side of the rectum, which came down and involved the whole mucous membrane of the rectum. I advised dissecting up the membrane and then tying off the hemorrhoids and then stitching the membrane over the cut surface, but this was not done and a raw surface is still left, which is exceedingly slow to heal.

Dr. Weaver—The remarks of Dr. Murphy in reference to thorough examination are of great importance. Operation is the only correct method of treatment where abscesses of long standing in which there is a pyogenic membrane which should be dissected out.

Dr. Howell in closing said: After having one case refuse to heal I think I should never operate again on fistula without dissecting out the diseased tissue and closing the wound as in perineal operations.

# BRIEF NOTES OF THREE CASES OF FACE PRESENTATION.

By J. HARRIS JONES, L. R. C. P. Edin., Wilkes-Barre, Pa.

[Read May 25, 1891.]

It is somewhat unusual in a general practice to have three cases of Face Presentation occurring within a year, but the last twelve month has been, in my obstetric experience, a year full of many deviations from the normal standing of labor. I do not bring these three cases before the society because they present anything extraordinary from the general run of face presentations, but there are a few points connected with these that may possibly be worthy of your consideration.

Case I.—The first of these cases occurred in April of last year. The patient was twenty-one years old, and it was her first confinement. The liquor amnü escaped spontaneously at a very early stage of the labor, and before my arrival. The face presented in the right oblique or first position. The forceps was not applied until it was evident that the pains, which were fairly strong and frequent, were inadequate to expel the child.

Case II.—It seems a peculiar coincidence that the second case of this series occurred to the mother of the preceding one. Labor took place in the same house and 297 days after the daughter's confinement, *i. e.* seventeen days beyond the normal gestative period. The presentation was identical with the former. A midwife had been engaged, but finding that her labor was progressing very slowly I was sent for. Upon arrival I found that the liquor amnü had escaped two or three hours before, and that the face occupied the cavity of the pelvis. I waited a little while to learn whether the pains, which were inordinately strong, would not accomplish delivery. After waiting three quarters of an hour and observing that the face remained in statu quo, although the pains were as powerful as any I had ever witnessed, I resorted to the forceps and effected delivery, but not without considerable force. This patient was forty-six years old and the mother of twelve children. She had never employed a doctor in her previous confinements.

Case III.—The third case occurred on the 14th ultimo in a primipara aged twenty-five years. I was called at 3 P. M., but she had been in labor for twelve hours previously. The os uteri was dilated to the size of half a dollar and the membrane protruded in a long and conical manner—not appearing as a broad globular mass, which is so suggestive of a normal presentation. I do not remember seeing in books much stress placed upon the contour of the presenting bag of the waters, but this is certainly a subject which may be studied with some advantage to the accouchur. I regard the

form which I have stated was felt in this case as ominously unfavorable and suggestive of some irregularity in the presenting surface or surfaces above it. It is an axiom in hydrostatics that fluids have no shape, but what they receive from the containing vessel; and it is fair to conjecture that when the presenting part of the child has uneven surfaces the membranes are permitted to protrude irregularly in the direction of those parts which have least resistance and their contour thereby changed from that which occurs when a nearly globular mass presents, as, for example, in a natural presentation. It was some time before I was able to touch the presenting part with my finger, and when I did succeed I was unable to determine whether I had a breech or a face presentation to deal with. My curiosity had the best of me and I ruptured the membranes when the os was a little more than one-half dilated—prepared, however, by the dilatableness of the structures to turn if I found it necessary. Labor proceeded by easy stages, and at 9.30 P. M. the forceps were applied. I do not remember a case where greater traction was required than in this. It was a very sultry evening, the room was small and stuffy and I was becoming exhausted. Dr. Davis very promptly responded to a call for assistance, but labor had been terminated before his arrival. The child was weighed the next morning and found to be fourteen pounds in weight. There was a partial laceration of the perineum. In the other cases the integrity of that body was maintained to a fibre.

In passing, I may be permitted to remark that hitherto I have had the good fortune never to rupture the perineum to any great extent, a result I attribute to my never being in a hurry to effect delivery at the outlet and to a tilting upwards of the handles of the forceps (which I always practice) to a plane as parallel as can be brought to that of the maternal abdomen. In each case the child was born alive, but the second survived its birth only half an hour. To neither child was any harm done by the forceps, but they were all considerably disfigured, as is customary in face presentations. This, however, vanished in a few days. Most writers on midwifery recommend patience in dealing with face presentations, claiming that if enough of time is allowed nature will effect delivery. Undoubtedly she will in many instances, but we are living in a restive age, and doctor as well as patient, has partaken of this spirit of unrest. But apart from this, I ask the question (which is of far greater import), is it better, in these cases, to wait upon nature or let art step in to assist? Personally, all things being favorable, I decidedly cling to the latter, and for four reasons:

*First*, Face presentations are acknowleged to be always tardy deliveries.

*Secondly*, Often times they are so prolonged as to seriously jeopardize the patient's strength—rendering her less resistent to any of the sequelae which may follow accouchement, such as septicaemia, metritis or peritonitis.

*Thirdly*, Even after a protracted waiting upon nature, a resort to artificial delivery is by no means an unusual necessity; and—

*Fourthly*, In the interest of the child, a timely application of the forceps may be the means of saving a life which would otherwise be sacrificed. I am confident that the death of the child, in the second case reported this evening, was attributable to a too close observance of the teachings of those who claim that expectancy should be the accoucheur's watchword when dealing with a face presentation.

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## THE MODERN TREATMENT OF WOUNDS.

By G. H. Kirwan, M. D., Wilkes-Barre.

[Read June 17, 1891.]

The proper treatment of wounds is a procedure of such frequent occurrence in the practice of every gentleman present, and one upon which I may be able to say so little that is new, that I should perhaps have selected a more interesting theme for to-night's paper, but it is a subject that has always had a great fascination and special interest for me, and if in what follows I shall succeed in presenting anything new of value to you and in eliciting a full and free exchange of views, I will feel fully repaid.

The aseptic and antiseptic treatment of wounds, known also as Listerism or the Listerian principle, is to-day in general use by a very large majority of all the leading surgeons of the world. It has, as you all know, for its primary object the prevention of putrefaction or suppuration in wounds. This principle, in a crude or primitive manner has (perhaps unconsciously) been carried out for ages past; the measures taken by the fishmonger to preserve his fish; the housewife her vegetables; the Roman distiller controlling fermentation in his wine vats with pitch; the German mothers preserving

their dead children on ice ; and the Arabian destroying putresence with alcohol, were all forerunners of our Listerism of to-day.

As applied to practical surgery the antiseptic treatment in a restricted and obscure sense has been attempted for more than a century, even the writings of surgeons of remote antiquity, such as Bruno and Rogerious, leave evidence that they grasped the idea of the effects of putrefaction. About this time Lisfranc discussed the dangers of treating the wounded in tents, owing to exposure to impurities in the atmosphere.

In the sixteenth century Ambrose Parè demonstrated that "a gunshot wound was not necessarily a poisonous wound if protected from atmospheric influences." In the seventeenth century Megatus states his belief that, "the air contains influences which cause or favor putrefaction and in consequence of this belief recommended infrequent dressings." In the eighteenth century we find that Belloste, Parmanus, Anel, Boerhave, LeDran and Heister are more specifie still regarding methods of excluding putrefactive influences. Next followed Abernethy and a long list of surgeons who approximated still nearer the present antiseptic treatment, but it remained for Sir Joseph Lister to systematize what had been done, and to build up antiseptic surgery on a new principle, namely, the absolute *prevention* of putrefaction from the beginning. The problem that Lister sought to solve may be briefly stated as follows : "On all objects in the external world septic dust is present—on the skin of the patient, on the hands of the surgeon, in water, in the air, &c.—and when a wound is made any introduction of this dust mnst be carefully avoided as it provokes germination, and germination means septicaemia pyaemia and gangrene. Some sort of a dressing must be provided which shall prevent the passage of this septic dust in an active state to the wound and at each change of this dressing the problem is the same as at the time of the infliction of the wound." This is Listerism, and it is scarcely necessary to speak of its success to you. The hospitals of the entire world have adopted it and after years of trial the outcome is entire success. The results are astonishing. At Bellevue, where ten or twelve years ago the rule was septicaemia, pyaemia and few recoveries; now, surgical fever is rare, pus is unknown and the patient eats and sleeps well from the very first. The class of wounds that always suppurated never do

so now and of this category are the compound fractures, amputation wounds, excisions and other major operations. Dr. Stephen Smith says of the change at Bellevue, "It is a complete vindication of the antiseptic progress in perhaps the most unfavorable atmosphere in New York." Says Prof. Tyndal, the great naturalist, "It is a matter of surprise that the London hospitals have made such progress." Queen Charlotte's Lying-in Hospital furnishes an illustration, where "out of nine hundred cases in one year not one was lost." If one reads the transactions of the British or our own American Medical Associations now-a-days there will be found in every volume dozen of references in praise of antisepsis in both hospital and private practice. Dresden has changed a mortality of eighteen per cent to nil. The records at Hamburg, Vienna, Paris, Berlin, New York, Philadelphia, Chicago, Baltimore and other large cities have proven beyond all question the valne of antisepsis. In private practice the record is the same throughout the world. The surgeons of note who now treat wounds by other than antiseptic methods are very rare, the two distinguished English surgeons who oppose Mr. Lister's teachings are Mr. Dawson Tait and Mr. Geo. Granville Bantock, as those of you who have followed the bitter and personal recent Journal discussions upon the question know, and as an interesting portion of this paper I submit the following correspondence:

WILKES-BARRE, PA., May 14th, 1891.

MY DEAR MR. TAIT:

I am preparing an essay on "Modern Treatment of Wounds," to be read and discussed before the Luzerne County Medical Society three weeks from to-day, June 3rd, and ask you to kindly reply, stating briefly your present views (wherein you differ from Mr. Lister) on the principles of wound treatment he teaches. I ask your indulgence for trespassing upon your valuable time, but do so in order that I may embody your views in my paper and be sure to quote you correctly. I will hold my paper open, expecting the valued favor of reply to this letter.

I remain, dear sir, respectfully yours,

G. H. KIRWAN, M. D.

*Mr. Lawson Tait, Birmingham, England.*

To this I received the following answer:

BIRMINGHAM, ENGLAND, May 21st, 1891.

DEAR SIR:

The only principle of management of wounds which I have adopted is that which I was taught in my youth and which I have adhered to ever since,

and from which I do not think anything is ever likely to make me depart and from which all departures at the behest of the illusory arguments and baseless theories of Lister have been mischievous. The principle of treatment of any wound is really single; that you must keep out of the wound all putrescible matter. It was taught and argued for before Lister was born. His theory was "never mind the putrescible material, but keep out the putrefying germs," a practical impossibility. The details of my practice in the treatment of wounds based upon this principle is, first the free use of the drainage tube, as taught by Chassignac; second, the use of a dry dressing of simple absorbent cotton wool, so long as the chance of the wound healing by first intention is possible. After that I go back to the old red lotion of my master, Prof. Syme, than which no better application to granulating wounds was ever devised.

Yours very truly,

LAWSON TAIT.

Mr. Tait further briefly and clearly defines his position in his final argument with Prof. White, published in June number of *University Magazine*, as follows: 1st. That the germs of putrefaction exist with restrained potentiality in all living tissue. 2d. That the restraining influence is what we call for want of a better name, "vital force." 3d. That when the restraining influence has its balance upset by what we call disease, lowered vitality, accident, etc., the germs are let loose to work their evil wills. "This," he says, "is the fundamental pathology which I was taught as a youth and my mature experience confirms it every day in every particular."

Another letter to Prof. Howard Kelly, the eminent Gynaecologist of Baltimore, asking if he agreed with Mr. Tait's views, brought the following reply:

BALTIMORE, MD., May 20, 1891.

DEAR DR. KIRWAN:

I gladly reply to your letter of inquiry. I *know* that germs (Staphylococcus pyogenes aureus, and albus, streptococus the colon bacillus and the bacillus tuberculosis) invade the peritoneal cavity after operations and kill patients. The staphylococcus is our greatest enemy, for it is the common cause of suppuration after abdominal operations. If we can keep out the germs the death-rate will be enormously reduced and convalescence hastened. All my efforts in my preparations for operation, in the conduct of an operation and in the after care of the patient tend in this important direction *to keep out the germs.* It is of no use to talk of cleanliness (the cleanliness of our forefathers is the septic filth of to-day) unless we accept the new definition of cleanliness in its *microscopic sense*, signifying freedom from germs Antiseptics are any active means taken to get rid of the germs.

Unfortunately there is no ideal antiseptie drug. A great variety of antiseptic agents have been tried and found wanting in important particulars. We must however never forget that the difficulty of discovering an ideal antiseptic drug does not militate against the fact that it is the germs which kill. Be sure of this fact, that under existing conditions there is no such thing as asepsis without a preliminary institution of a rigid antiseptic regime. Good soap and water is as much of an antiseptic as anything else, and as a mechanical antiseptic is better than many of the chemical antiseptics in use but do not make the mistake of thinking you can clean your hands with soap and water alone. Following this, a saturated solution of permanganate of potash is the best germicide I have found, and I have recently made some elaborate experiments demonstrating this fact. For a fuller consideration of this matter read my article on "Asepsis and Antisepsis" in the *American Journal Medical Sciences*, January 1891. If you will come to Baltimore at any time I will very gladly show you the application of these principles on a large scale.

Yours truly,

HOWARD A. KELLY.

I had intended, after having here given you the opposite views of these eminent surgeons by personal letter to me, to draw final conclusions therefrom, expressing personal beliefs, as is customary in a paper of this kind, but, on account of the very diverse opinions of these high authorities and the bitterness and personality that has characterized their replies to each other, I have concluded to pass the matter over without criticism or comment, entertaining at the same time my own private views, but leaving *you* to draw your *own* conclusions. We will now proceed to the consideration of the application of Listerism.

With reference to the choice of chemical germicides, bichloride of mercury holds first place beyond all question, being in all respects an ideal antiseptic, with the one exception that it cannot be used for sterlizing instruments on account of chemical action. I have had some experience with boric acid, alcohol, permanganate of potash, iodine solutions, Theirschs solution and carbolic acid, regarding which latter I wish to state very positively my fixed opinion, to which I expect exceptions will be taken in the discussion, but I *think* I can support what here follows by argument, and I *know* I can prove it by clinical experience. I name carbolic acid only to absolutely condemn its use in all cases. It is extremely disagreeable in odor, astringent and caustic in its action on the hands of the surgeon, and it is with some pa-

tients a dangerous poison even when absorbed in small quantities. It possesses not one-twentieth of the germicidal power of bichloride mercury, and its use in the dressing of wounds has more than once caused the actual death of the patient. Mr. Lister, who first gave it prominence in wound treatment, has now, I understand, entirely discarded it. Gerster says: "It will be seen that irrigating a wound, an amputation for instance, with carbolic lotion, will each time provoke very profuse oozing; vessels that had stopped bleeding by the formation of a clot within their cut orifices, *begin to bleed anew* after carbolic irrigation. This is caused by its peculiar macerating effect upon the fresh blood clot. Its color changes from a dark red to a light brick red, its toughness and cohesion are lost and the slightest touch of a sponge will detach it from the orifice of the cut vessels, thus renewing the hemorrhage. Another very unfavorable action of carbolic lotions upon wounds is the very profuse discharge of bloody serum provoked by it and continuing one or two days after operation, rendering one or more changes of dressing necessary within a day or two, and thus depriving the wound of needed rest at the most critical period of repair." Nearly all the surgeons of to-day who still use carbolic acid confine its use now to solutions for sterilization of instruments, but this can easily be done and with more certainty by a dry heat of 165 to 200 degrees Fahrenheit, which destroys all germ life on contact; or, by immersion in boiling water or absolute alcohol; and this last want of carbolic having been supplied it should be thrown out and discarded forever from the armamentarium of antiseptic appliances. Bichloride of mercury on the other hand, of which it is said paradoxically that "there is no danger in its use if you know the dangers of using it," is odorless, colorless, does not dissolve clots; hence oozing soon stops by natural means during its use; it does not irritate the vaso motor nerves as carbolic lotion does; hence the oozing subsequent upon an operation done with its use is very scanty, drainage is easier, and can often be entirely dispensed with. It possesses more than twenty times the germicidal strength of carbolic acid, hence solutions of very dilute strength (and therefore, unirritating) can be used. Its greatest advantage, however, is undoubtedly to be found in the different effects upon the fresh blood clot and its nonirritating effect upon the tissues exposed to its action in a fresh wound.

DESCRIPTION OF DRESSING.

I believe we should prepare or superintend the preparation of all our own ligatures, sutures, drainage, and dressings, and I feel amply repaid for doing so in the reliability, and sense of security I feel after dressing a wound with them. It is done briefly as follows: Ligatures and sutures of silk and catgut are washed, boiled and immersed for a few days in hydrarg bichloride one drachm, alcohol two ounces and one-half, water three and one-half ounces, and from this solution it is taken as needed for use. Ordinary catgut ligatures and sutures are treated the same. Chromic gut is prepared by putting catgut in ether for forty-eight hours, then immersed in the following solution for forty-eight hours then put in antiseptic, dry, tightly closed vessels. Acid chromic grains five, hydrarg bichloride fifty grains, alcohol two drachms, water twenty-two drachms. Aseptic horse-hair for capillary drainage is prepared by boiling and then storing in an alcoholic solution of bichlorde of mercury, and rubber tubes for tube drainage are kept in same solution after being first purified by boiling. Instruments should be thoroughly cleansed with soap and warm water (just after each operation and just before the next) then immersed in boiling water and kept under the surface of the water until used. I have a small alcohol lamp which will boil a shallow pan shape dish of granite iron ware used for placing instruments in, in a few minutes. And for irrigation of wound I use an ordinary four-quart fountain syringe familiar to all of you present.

In the purification of sponges we should take especial care, and after thorough soaking in repeated changes of water and boiling, keep them in solution bichloride of mercury one to one thousand.

GAUZE BANDAGES.

Ordinary cheese cloth may be bought in 100 yard lots for three cents a yard; boiled in an alkaline water to remove natural grease from it and make it absorbent; wrung out in hot water and again boiled in water *without* the soda. I roll it tightly the whole width of the material at once after passing it through a one to two hundred solution of bichloride, just before it is rolled up, and then with a sharp saw edged knife cut it off from this roll into bandages of different widths and pack it away moist in stone jars that have been washed tuo in the bichloride solution.

GAUZE AND WOOL COMPRESS.

Two layers of the cheese cloth, after having been rendered absorbent as described above, are placed evenly one upon the other; a thin layer of pure wool and then two more layers of absorbent cheese cloth are dipped separately first, in a solution of two drachms of double cyanide of mercury and zinc, suspended in four pints of a one to four thousand solution of bichloride mercury, then laid together in the order mentioned and loosely quilted together by asceptic hands, needle and stitches, and then resaturated in the same solution and packed away moist. The liquid double cyanide only holds the salt in suspension, not in solution, hence the necessity for immersing the layers separately and keeping it constantly stirred while impregnating the gauze. This describes briefly the preparation of the dressings and after a word regarding the double cyanide dressing we will consider their application.

This double cyanide compress is Mr. Lister's new dressing It is absorbent to a remarkable degree, is not at all irritating and applied therefore directly to the wound, dispensing with the use of the old "protective," which I could never bring myself to consider a proper thing to use. Mr. Lister states the advantages of this dressing to be: "First, that it is non-volatile; next, that it is almost entirely unirritating; thirdly, that it is insoluble in water and only soluble in three thousand parts of blood serum, and finally, that while it possesses but little germicidal value its inhibiting power is so high that a one to twelve hundred solution is sufficient to keep animal fluids permanently free from putrefaction. This combination of qualities is possessed by no other of the antiseptics which have been mentioned, and its deficiency in germicidal power is easily remedied by including in the manufacture of the gauze dressings which are impregnated with this material a small percentage of sublimate (one to four thousand), enough to be germicidal, but too weak to be markedly irritating." I *never* use wet dressings to a wound of either bichloride or any other antiseptic, because it is a sort of admission that we do not consider our wound is surgically clean (which it of course always should be), else the necessity for their use would not exist, and also because the absorbing power of a dressing (which is lost after its saturation), is one of its most desirable qualities. It is, I

am informed, the belief of some few surgeons that germs are capable of permeating in time any form of thoroughly dry antiseptic dressings, and it is known that this is not possible with wet dressings. I have never found this to occur and do not consider it possible with the double cyanide dressing shown you. Although, in the case of *this* disagreeable, foul smelling, foul looking, sample of carbolated gauze I would undertake to plant and grow and propagate, and multiply in the meshes of this gauze, a *whole colony* of germs, and yet it is made and sold for the antiseptic treatment of wounds.

### GENERAL TREATMENT OF WOUNDS.

With reference to the general treatment of wounds the means adopted for carrying out the principles of Listerism are many and varied, and being personally partial to the reading and discussion in our meetings here of the practical results of daily experience in preference to the repetition of pet theories, I will state briefly how I dress a wound (after saying that I have carried the simplification of wound dressing as far as dare be possibly without defeating the purposes of antisepsis) I name simply the materials I have made and used extensively myself, and therefore know pretty thoroughly from careful study and experience with them what I am describing to you. The art is much simplified over that of past years ; Mr. Lister says himself he is ashamed he ever advocated the use of the carbolic spray for the purposes then indicated, and many other unnecessary details have been dispensed with ; and I have discovered in my own experience that after one becomes thoroughly imbued with the importance of observing the broad general principles of antisepsis in the treatment of all wounds however trivial ; he almost unconsciously acquires a minuteness of detail in operation and wound dressing that is the great essential to success. Before beginning an operation (the room and its furniture and drapings having been looked after) we of course thoroughly sterilize instruments, hands and arms, and field of operation, as before described. As regards the field of operation this sterilization should be done the day before if possible, and continued up to and repeated just before the time of operation. After the operation all residual blood clots being removed, and all hemorrhage and hemorrhagic oozing checked as far as possible, the *ideal* method of closing a wound is by successive layers of buried aseptic animal su-

tures. The absence of hemorrhage and serious oozing and careful correct apposition of the wound surfaces from its depth to the surface in all aseptic wounds will insure primary union without pus in a great majority of cases. We should never merely close over the surfaces of a wound and leave a cavity or pockets for the accumulation of discharges. If it be such a wound that by reason of its location or contour we *must* leave it thus ; we should always drain it. After all bleeding has been controlled, all oozing checked and correct apposition secured of the wound surfaces ; it may be, I say may be (because I have dispensed with it for a year past with just as good results) ; it may be dusted with iodoform and the new Lister gauze applied and secured by a bichloride bandage. This wound, thus dressed, should not be disturbed (next to correct dressing *rest* being the greatest desideratum in healing of wounds) unless rise of temperature shows it is not aseptic—or through saturation of dressings evidences a very unusual amount of oozing, for, from one to three weeks, or until the wound is entirely healed. In the case of superficial or small wounds, especially incised wounds, and particularly of the face and scalp, where good apposition can be made, I never apply any gauze dressing but instead I hermetically seal over the line of incision with a saturated solution iodoform in collodion.

In the original scheme of this essay I had intended at this point to go into the modern details and expedients of the treatment of special wounds—such as burns, suppurating lymphatic glands of the neck, and other regions. Old ulcers, (usually varicose with eczema) of the leg, etc., which I have treated antiseptically by special methods for a year past, but not wishing to weary you I will leave the consideration of these *special* wounds for another occasion, and, in conclusion, wish to ask your attention to an expedient in wound treatment I believe, in part, at least original; certainly so in the sense that I have never read of it or had it described to me since or before practicing it, and I ask you all to give it a trial and report your results. You know that Mr. Lister stated at the Berlin congress that judging from the analogy of subcutaneous injuries he hoped that "a wound made under antiseptic precautions might yet be forthwith closed completely and the line of union perhaps sealed hermetically with some antiseptic varnish." Now, the only reasons why this cannot

be done are two, excessive serous oozing from an aseptic wound or oozing and discharge from a contused wound, or abscess cavity (which character of wounds *must* discharge for a time), but if this discharge can be removed by any other avenue than the wound itself the wound surfaces can be hermetically sealed and are thereafter in reality similar to subcutaneous wounds. This is accomplished in cases adapted for it in this way by what we may appropriately call "pendant drainage." Take for example the semi-lunar scalp flap we make before a trephining operation. The anteroposterior skin flaps of an amputation, or the obliquely inferior or lower flap left after amputation of the breast or different abscess cavities or contused wounds of some kinds; and, by scoring, or button-holing, the lower flap in the most pendant angle of the wound and passing the drainage through it at a point beneath and somewhat remote from the cut surfaces, but communicating with the wound cavity under them, we thus drain it perfectly and can then seal over the wound surfaces hermetically with iodoform colodion and thus give it the character of subcutaneous wound; and of course remove the drainage later on when indicated. I have carried this idea into practice for three months past wherever opportunity offered with excellent results. It has been used by me upon the scalp; after an operation for schirrus of the breast, in which the axillary region was invaded with a surface incision of thirteen inches in which no gauze compress was used and which united without one drop of pus. And, in two compound fractures in all, with complete success. It would be a grand advance in wound treatment if we should yet be able to treat wounds without any dressings at all and thus would be realized Mr. Lister's early dream.

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12. University Med. Magazine, June, 1891.

## Meeting of July 1st, 1891.

A regular meeting of the Society was held at their rooms on July 1st, at 8 P. M. Dr. D. W. Mears, of Hazleton, read a paper on "Obstructive Dysmenorrhea, with reports of cases and operations."

[A copy of this paper has not been furnished for publication.—K.]

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# THE CAISSON DISEASE.

By Charles P. Knapp, M. S., M. D., Wyoming, Pa.

[Read July 15, 1891.]

The Montgolfiers in 1783 utilized rarefied air for the exploration of the space above us, and in 1839 Triger utilized compressed air, to penetrate the realms beneath; the application of these extreme conditions of the atmosphere to the navigation of the air, and the sinking of shafts through soft bearing material such as quick-sand and water has added much to human knowledge, comfort and wealth, and are the outgrowth of a close study of phenomena enunciated in the principles of Archimedes and Torricelli.

Compressed air has long been a mooted therapeutic agent. Henshaw's domicilium of 1664 has gone through various phases to the pneumatic cabinet of to-day—the most prominent exponent of the most prominent institute of pneumotherapeutics is now a visitor in this country, Dr. Hovent of Brussels. The discoveries of Torricelli were thus early applied to practical medicine, which calls everything in the air above, the earth beneath, and the water under the earth to its ser-

* Official Report. Dr. C. P. Knapp, Editor.

vice, and it was practical medicine that suggested the application of this pneumatic principle to the arts. Though diving bells were used early in the sixteenth century, the condition of the air within them seemed to have attracted little attention. Hamel and Colladen published some account of these effects while working in diving bells at Hawth in 1820–'26. Their observations are so mixed with the results of exposure to cold and wet, as to be of little value. To Triger, a French engineer, the practical application of atmospheric pressure in keeping back water from shafts is due. His observations were made at Tabaries remedial Baths, and work was begun in Chelonnes in 1839 to reach the deep vein of coal in the valley of the Loire, through twenty meters of quick-sand in communication with the water of the river. This primitive caisson, which must serve for a description, for this article, of those of more modern dates, the principle being identical, was an iron tube seventy feet long by three and one-half feet in diameter, with an air box or chamber at the top (now called the lock) having a valve opening inward at the top, and another below into the tube, large enough to permit the passage of the workmen, and the removal of the material then carried out in bags—as is the rocky material of to-day, the soft bearing substance being blown out by pipes or pumped out by the sand pump of Gen. Sooy Smith. The air in the main tube was compressed sufficiently by steam condensers to keep back the soft material. Men entered the chamber, or lock through the upper valve. It was then closed, and the lower one gradually opened until the air in the chamber was of the same density as the air in the tube, when the men descended to their work, called "locking in."

Here certain phenomena occur, relating to the ear and sinuses about the face. They are mechanical in nature, for instance if the Eustachian tube is closed the air being more condensed on the outside, causes the drum to bulge inward, and this has gone to rupture, as reported by Smith in one case at the caissons of Brooklyn Bridge; the air being rare in the cavity of the tympanum, this delicate structure suffers congestion up to a point of inflamation. This occurred in one of my cases—No. 12; having a well marked attack of *otitis media.* The frontal and maxillary sinuses may be affected in the same way, causing intense pain, which generally decreases as the air filters through the obstructions. I always direct men

to inflate middle ear, before entering the lock, and if they could not hear the distinct thud in both ears to remain out until the stoppage was overcome by the method of Politzer. Locking in with mouth open, or blowing nose in the lock often enables them in work parlance to change their ears.

To return to Triger caisson on coming out the process was reversed, locking out. Here again we may have ear and sinus trouble. A single case occurred under my observation. The engineer in charge on coming out had severe pain in left frontal sinus, in walking to my office there was a sudden flow of bloody mucus from the nose and the pain ceased. The compressed air in the sinus forced its way out through natural channels after the external pressure was removed. While under the head of locking out I might as well call attention to the importance of this process. Smith says: "The most frequent cause of caisson disease is too rapid locking out, indeed if sufficient time were allowed in coming out the disease would never occur." The system would have time to adjust itself to the various changes of atmosphere. Men are impatient to go home, or leave work, and the lock man, however faithful, is apt to be overpersuaded. The valves should be so arranged that a definite time is consumed, at least three minutes per atmosphere in going in and five minutes per atmosphere in coming out. In France I believe this is under the care of a government official. Triger's tube cassion was sunk as the material was removed from the bottom and the attempt was entirely successful. He made the following observations:

1. At the pressure of three atmospheres it is impossible to whistle, while a lower pressure does not produce this effect.

2. In compressed air every one speaks through the nose and this is more noticeable the higher the pressure.

3. All laborers remarked that in ascending the ladders they were much less out of breath than when mounting to a similar height in the open air.

This is a fact that should not be lost sight of in constructing a caisson—always place lock at the top, so as not to have a fatiguing ascent after coming out of compressed air, or use an elevator.

4. A laborer who had been deaf since the siege of Antwerp (1832) always heard more distinctly in the compressed air than any of his comrades. The improvement was temporary.

5. No illness was occasioned among the laborers except that two of them, after seven hours of labor in the tube experienced severe pains in the arms and knees coming on about half an hour after ascending into the open air. These are the first recorded cases of caisson disease, so named by Dr. Andrew H. Smith of New York, surgeon in charge of caisson work at Brooklyn Bridge.

In 1845 the application of the same principle was made at Douchy in France. Pol who had charge of the men made the following summary:

1. A pressure of 4¼ atmospheres is not in itself dangerous, but the return into the open air may cause serious accidents, and even sudden death. The danger is in proportion to previous pressure.

2. The pathological changes consist in visceral congestions among which congestion of lungs and brain takes the foremost rank (?).

3. The tendency to these congestions increase with age, at least between 18 and 55.

4. Not the period of greatest strength which is between 30 and 40, but between 18 and 26 is that which is exposed to the least danger.

5. Experience teaches that the ill effects are in proportion to the rapidity with which transition is made from compressed air to normal atmosphere.

6. Unimportant troubles, such as cough, gastric symptoms, etc., may be due to smoke from lamps, etc.

The air of the caisson is much improved in modern times by use of electricity for general lighting and improved candles for special work, the use of water in blowing out material also adds to coolness of air.

7. The treatment is not different from that which is usual when like symptoms arise from other causes. The first indication is to bring about a reaction which in turn is to be combated when it exceeds physiological limit.

8. One case seems to indicate that the quickest and safest means of restoration is an immediate return into the compressed air.

This observation is being widely used to-day. Hospitals are being planned and constructed, where extensive work of

this kind is going on, in which air of the condensation of the caisson is kept, and cases are returned to this, and equalization made deliberately and with success.

9. Cold to the surface is the best means for restoring the function of the skin.

Time and space forbids the quoting of the observations of Foley at Argenteuil, Jaminet at St. Louis and Smith at New York, but they do not differ in general from the earlier observers.

I now pass on to the clinical history—morbid anatomy and pathalogy of the disease.

### CAISSON DISEASE.

A disease depending upon increased atmospheric pressure, but always developed after the pressure is removed. (Smith.)

*Symptoms.* Neuralgic pains. Remittent in character and very severe, called by men "Bends," on account of their cramp-like nature. These pains usually affect the brachial and lumbar plexuses. As I think chiefly from their anatomical situations. Stiffness and soreness follow, rarely heat, redness and ecchymosis at seat of pain.

*Pulse.* My observation showed it to be about 100 usually if case was seen in fifteen minutes after coming out, if delayed for half an hour about sixty or seventy.

*The Skin.* Cool, pale to leaden hue. Covered with cold sweat like that following fright and is no doubt due to nervous causes.

*Epigastric Pain and Vomiting.* This I found generally occurred when pressure was over thirty-six pounds and was usually accompanied with a girdle like feeling around navel line. More or less paralysis usually followed this symptom.

*Paralysis.* This occurred in four of my cases—in all cases being the lower half of the body. Sometimes it is immediate and without pain; in other cases comes on after pain, the bladder and bowels are generally involved.

*Cerebral Symptoms*, are frequent when pressure is over thirty-six pounds. Headaches, dizziness, double vision and uncertain gait, incoherence of speech and unconsciousness—these usually pass off quickly but dizziness may persist for some time, especially on quick motion.

*Prognosis.* No fatal cases occurred under my observation.

The duration was from one hour to five days—except two cases of paralysis which ran into weeks.

*Morbid Anatomy.* (Smith.) The constant lesion in fatal cases is congestion of brain and spinal cord—in some instances more or less serous effusion in the arachnoid, vascularity increasing as tissues are dissected deeper. If sufficient time elapses before death, softening may occur from coagula in vessels. Solid abdominal viscera congested; mucous membrane of stomach, intestines and bladder ecchymotic. Lungs, simple hypostatic congestion, not bearing out Pol's observation.

*Pathology.* The human body being made up of tissues of different densities, permeated with vessels, it is evident that if the atmospheric pressure is raised, it does not compress all parts alike, and the blood circulating in the compressible tissues will recede to those least compressible, and cause them to become congested, according to the degree of resistance they present—thus we have three degress of congestion: 1st, The parts enclosed in bony structures. 2d, Large and resisting glands; and 3d, All centers at expense of periphery.

The removal of the pressure and not the pressure itself is the cause of the seizure, if locked out quickly, the vessels do not resume their normal condition instantly, and the whole vascular system is relaxed, either from overdistention or anaemia, and as a natural consequence the vascular tension is lowered. The circulation is languid, the congested parts do not empty themselves and disturbance of function is the result.

The theories of Francois, Rameaux and Bert—that the disturbance is caused by air absorbed by the blood and afterwards liberated either as air, oxygen or nitrogen—I do not find carried out either by experiment, clinical observation or therapeusis. Nor the theory of Jaminet that the symptoms are due to fatigue from too rapid tissue change.

Two elements are necessary in the causes for the seizure which present themselves (according to the pathology endorsed), pressure and time. I am inclined to think with Smith that there is a special predisposition and I cannot refrain from quoting a unique and valuable idea of his, namely, that in certain persons who suffer rheumatic pains, when a storm approaches, or the atmosphere is damp, it is simply an exaggeration of a predisposition which we find in those in caisson work, due in this case to the low barometric condition super-

ceeding a condition to which the body has accustomed itself, and not to dampness.

From the pathology of the disease you readily see how great an exciting cause rapid locking out becomes. If sufficient time is given, the system slowly regulates itself and prevents seizure, and this at once presents a prevention and form of treatment of the disease. Experience has also shown that newness to the work, physical condition—stout, fat, heavy built men, suffer most, abuse of alcohol, entering caisson fasting, and exertion after coming out, are predisposing causes.

The following cases occurred in 1889, '90, '91, under my observation as surgeon for Sooy, Smith & Co., of New York, while they were putting down two caissons for the Mt. Lookout Coal Company, near Wyoming:

CASE No. 1.—August 27, 1889. Age 25; old hand. Pressure 29 pounds, temp. of caisson 84°. Blowing out material. After eight hours work, with half hour recess, on coming out complained of sick stomach and prostration; quickly lost use of arms and legs; taken to boarding house. Saw him one-half hour after coming out. Partial paralysis of motion and sensation in arms; complete paralysis of motion and sensation in legs. Urine retained, catheter passed, urine normal. Pulse 84, respiration 20, temp. 96° F., skin cold and colorless, vomiting. One-quarter grain of morphia hypodermically relieved vomiting. Put to bed between blankets and hot water bottles placed around him. Squibbs fluid extract ergot one fluid drachm every hour. Five hours later arms fully recovered and sensation restored to legs. Urine retained and drawn, as at first visit. Quantity increased; on examination was normal as in all other cases examined. Fluid extract ergot one fluid drachm every two hours; at end of twenty-four hours motion restored to legs, and urine passed naturally; cannot walk or stand. Fluid extract ergot one fluid drachm every three hours; end of fifty hours returned to work. This was his second attack.

CASES 2 AND 3.—September 4 and 7, 1889. Ages 23 and 26 years; new hands. Pressure thirty pounds, temperature 84°; blasting, after six hours work, one-half hour recess. Had upon coming out severe pain in arms and legs; saw twenty minutes after coming out. Pulse about 90, respiration normal, temperature 96 and 99°, urine increased. One-half grain morphia hypodermically gave complete relief.

CASE 4.—September 9, 1889. Age 25; old hand. Condition of caisson same as previous cases. Blasting, after six hours work, one half hour recess. Sick stomach on coming out. Pulse 60, respiration normal, temperature 96°, urine retained. Complete loss of sensation and motion of legs. Put to bed between blankets and hot water bottles applied. Fluid extract ergot one fluid drachm every hour; end of six hours able to pass urine,

and regaining sensation in legs. Fluid extract ergot one fluid drachm every three hours. Walked in three days; returned to work at end of fifth day.

CASES 5 AND 6.—September 19, October 29, 1889. Ages about 30. One old hand and one new. Pressure 32 and 33 pounds; temperature 56°; blasting and timbering; after six hours work, one-half hour recess. Severe pain in legs, sick stomach, dizzy head. Saw one-half hour after coming out. One-half grain of morphia hypodermically gave relief. Had to repeat in six hours and in six again, when they returned to work.

CASE 7.—November 1, 1889. Age 25; old hand. Pressure 33 pounds; temperature 48°. Timbering. After six hours, one-half hour recess. Severe pain in arms and partial paralysis of legs. Saw three hours after coming out. One-half grain of morphia hypodermically relieved pain. Fluid extract ergot one fluid drachm every hour for three doses, then every three hours. So stiff and sore as not to return to work in three days; would not go back in caisson.

CASE 8.—April 6, 1890. Age 35; new hand. Pressure 33 pounds; temperature 53°; blasting. After six hours work, one-half hour recess. Fell over insensible on coming out and quickly recovered, when severe pain in arms and legs came on, dizziness and unsteady gait. Saw in fifteen minutes. One-half grain of morphia hypodermically relieved pain. Fluid extract ergot one fluid drachm every hour relieved dizziness and unsteady gait, but for some time after on sudden motion patient was apt to fall.

CASES 9 AND 10.—April 9 and 10, 1890. Age 40 and 42; one old and one new hand. Condition of caisson same as in previous cases. Severe pain in arms and legs on coming out. Saw immediately. One half grain of morphia hypodermically gave prompt relief.

CASE 11.—April 15, 1890. Age 50; new hand. Pressure 34 pounds; temperature 64°; blasting. Came out after one hour's work. Began vomiting and suddenly collapsed. Pulse a flutter. Respiration about 12; temperature not taken. Gave one-half grain of morphia and one-fiftieth of digitalinum hypodermically; better in twenty minutes. Complained of great distress in stomach and pain in knees. Fluid extract ergot one fluid drachm. Condition of stomach relieved on swallowing ergot. I have found this to be the case whenever ergot is given. At the end of one-half hour one-half grain of morphia hypodermically for pain in knees. No further trouble. Patient unable to work for several weeks on account of general weakness. Did not return to caisson.

CASES 12, 13 AND 14.—April 15, 21 and May 18. Young men, 20, 26; new hands. Pressure 34, 36 and 38 pounds; temperature 64°; blasting. After six hours work, one-half recess. Severe pain in arms and legs. One-half grain of morphia hypodermically relieved promptly and they returned to work next day.

CASE 15.—May 26, 1890. Age 36; old hand. Pressure 40 pounds; temperature 64°; leveling off rock. After five hours work, pain in arm, numbness of limbs, gradually extending up to body above navel. Sick at stomach. Five hours after coming out the pain in arms having been relieved by one-half grain of morphia hypodermically, the patient could no longer walk. While waiting for me applications were made to legs so hot as to completely burn skin off one calf to the muscles. Complete paralysis of motion and sensation to above navel. Pulse 100; temperature 100° F.; respiration 22. Urine retained; bowels relaxed. Patient very restless and anxious. Fluid extract ergot one fluid drachm every two hours. Ten hours after patient's condition good but paralysis the same. This, with retention of urine and loss of control of bowels continued to July 1, when slight motion began and then sensation with control of bladder and bowels. Patient walked on August 16. Burn healed slowly and herpes appeared along course of nerves in legs. Treatment—tonic and stimulant, with electricity and massage of muscles as they showed signs of motion and sensation. Patient completely recovered.

CASE 16.—June 21, 1890. Age 40; old hand. Pressure 37 pounds; temperature 64°; leveling off rock. After six hours work, one-half recess. Severe pain in arms and legs on coming out. One-half grain morphia hypodermically relieved.

CASE 17.—June 29. Age 28; old hand. Condition of caisson and work same as in previous case. On coming out about 1 a. m. on the way home, became dizzy and sick at stomach, fell and could not get up when at gate of boarding house; crawled up to the door and aroused the inmates. Mustard bath. Fluid extract ergot one fluid drachm every hour. All right in the morning.

These occurred in the first shaft sunk:

| | |
|---|---|
| No. of hands | 109 |
| Old hands | 84 |
| New hands | 25 |

Time: May 25 to Nov. 25, 1889; April 5 to July 5, 1890.

| | |
|---|---|
| Average No. of men per shift | 18 |
| Average No. of consecutive hours | 3⅛ |
| Average recess | 30 minutes. |
| Mean pressure | 22 pounds. |
| Highest pressure | 40 pounds. |
| Depth of shaft | 86 feet. |
| Time of looking out | 10 minutes. |

This shows about 10 per cent. of old hands and 35 per cent. of new hands.

CASE 18.—September 29, 1890. Age 40; new hand. Pressure 39 pounds; temperature 74°; blasting. After eight hours, with one-half hour recess.

Became unconscious on coming out; this lasted fifteen minutes. Superintendent then gave him whiskey, one ounce. Fluid extract ergot one fluid drachm. Had entered caisson fasting. Beef tea was given freely and ergot one fluid drachm every three hours. Went away to boarding house in carriage after four hours and was well at the end of twenty-four hours.

CASE 19.—September 30, 1890. Age 23; old hand. Pressure 40 pounds; temperature 76°; blasting; after eight hours, one-half recess. Sick at stomach on coming out; girdle pain and construction around waist; legs paralyzed. Pulse 100; respiration 20; temperature 97°. Urine retained, bowels uncontrolled. Great excitement to hysteria. Bromide of potassium twenty grains, fluid extract of ergot one fluid drachm every two hours. In four hours excitement abated. Paralysis as mentioned above continued to October 13, when he was removed to his home in Maryland; began to walk in December and completely recovered. Bed sore at end of spine and herpetic eruption on legs complicated the case.

CASES 20, 21 AND 22.—January 6, 14, and February 1, 1891. Young men, from 20 to 26; two old hands, one new. Pressure 34, 42 and 39 pounds; temperature about 38°; blasting and concreting; after six hours, one half hour recess. Unconscious on coming out. This would pass over in about fifteen minutes. Legs would be paralyzed, urine retained and bowels uncontrolled; this would continue about twelve hours. Fluid extract of ergot one fluid drachm every hour for four hours, then every two hours for six hours.

The above cases occurred in second shaft:

| | |
|---|---|
| Number of hands | 41 |
| Old hands | 33 |
| New hands | 8 |
| Time: August 2, 1890; February 14, 1891. | |
| Average number men per shift | 10 |
| Average number of consecutive hours | 3⅛ |
| Average recess | 30 minutes. |
| Mean pressure | 24 |
| Highest pressure | 42 |
| Depth of caisson | 103 |

Only five cases occurred while sinking this caisson.

Cases were treated in shifting shanty at head of shaft, where bunks, hot water, blankets, medicine, etc., were kept, except in cases mentioned as removed home.

### PROPHYLAXIS.

The ideal prophylaxis would be a rigid quarantine of the men in barracks, when any considerable number or great length of time is consumed at this work. This however is

almost impossible and the enforcement of the rules of Smith and the ready access to a comfortable shifting room on coming out which should be under charge of an intelligent steward, who could quickly apply the remedies used, would do away with much of the trouble. If a pneumatic hospital or cabinet could be supplied and threatened cases treated at once in them I think we would have only few serious cases. Smith used the following rules:

RULES.

1. Never enter caisson with an empty stomach.
2. Use as far as possible a meat diet, and take coffee freely.
3. Always put on extra clothing on coming out, and avoid exposure to cold.
4. Exercise very little on coming out, lie down if possible.
5. Use intoxicating liquors sparingly, better none at all.
6. Sleep eight hours every night.
7. See bowels are open daily.
8. Never enter caisson if sick.

I would advise examination of the men before employment as lung, heart, or kidney disease, might be a cause of fatal cases.

Mr. Collingwood's rule for number of hours work should be enforced. Taking twelve hours as a days work, under ordinary pressure, then in two atmospheres he can labor about half time, three atmospheres one-third time, four atmospheres one-fourth time. Time is inversely as the pressure.

TREATMENT.

Is simple, quiet, and warmth on coming out; with beef tea, coffee or wine of coca.

Morphia hypodermically controlled for me all pain, gastric disturbance and vomiting, and very rarely was a second or third dose needed.

The employment of ergot from its known physiological action, and the pathology of the disease was suggested by Smith before seeing a case. That it has a well marked action in the disease I am fully convinced, and from its use in the shifting shanty by the man in charge I am satisfied several cases of serious paralysis were aborted. The men themselves ask for it on coming out, both for pain and the peculiar girdle pain dreaded by them as a fore-runner of paralysis. Time

and space forbids the narration of the many experiences during my service at this new work to our valley, and also the many therapeutic hints that the caisson gave me on pneumatics.

The chief authorities I have used are Triger, Pol, Foley, of France; Smith and Jaminet, of America; my thanks are also due to Messrs. Christie, Jarret and Kellogg in charge of work, for their ready assistance in any investigation and their prompt adoption of sanitary suggestions. To their efforts I am sure, two shafts have been put down, equal in difficulty to any ever sunk, without loss of life or any permanent injury, and with as small a percentage of cases as any work of equal magnitude under this or any other system.

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## DIPHTHERIA.

By W. G. Weaver, M. D., Wilkes-Barre, Pa.

Diphtheria, one of the most common and perhaps the most fatal malady of childhood, is of great antiquity, probably antedating the Christian era. It has encircled the globe, occuring in every country reached by commerce and travel, spreading havoc and death whenever found. It has been the subject of more accurate and scientific investigation in recent years than any other disease, except, perhaps, that of tuberculosis.

Notwithstanding the many discussions of and experiments regarding its treatment it continues to be one of the most dreaded of diseases, and the percentage of deaths continues large. Since the publication of Klebs in 1883, and of Löffler in 1884, regarding the bacillus which the former pronounced to be the probable specific cause of diphtheria, various and contradictory conclusions have been drawn by the numerous investigators who have made bacteriological studies in order to confirm or disprove the conclusions of these investigators, and it must be confessed that until very recently the original conclusions did not seem to be sustained. A great change has now occurred, however, and the almost universal verdict at present is that the cause of diphtheria is the Klebs-Löffler bacillus.

In 1882 Wood and Formad were employed by the National Board of Health to investigate the cause of diphtheria, and after many microscopical examinations and carefully conducted ex-

periments, they came to the conclusion that "the micrococcus diptheriticus and the M. septicus, inasmuch as they responded alike to chemical, optical and vital tests, are identical."*

In 1883 Klebs made further and more extended investigations regarding the cause of this disease, and formed the opinion that a bacillus which he had observed upon pseudo-membranes and upon inflamed tissue merited especial attention as the probable cause of diphtheria.† Löffler subsequently extended these investigations, and the organism known as the Klebs-Löffler bacillus became prominent as a probable causal agent. To Löffler we owe the first bacteriological study of diphtheria by the modern culture methods. His investigations, though accurate and careful, were not conclusive, and he was compelled to express himself with reserve as to the significance of the bacillus which he had studied. It was unfortunate that a great truth, a great discovery, in science should not have had woven around it such a chain of evidence as to settle the matter for all time ; such a chain for example as that with which Koch had presented his memorable publication on tuberculosis a year or two previously. The Klebs-Löffler bacillus therefore from the first assumed a doutful status, and in nearly all works on diphtheria, not less than a year old, it is referred to as one of the many claimants to be regarded as the cause of diphtheria.

By the painstaking investigations of Brieger, Fränkel, Roux, Yersin, Welsh, Prudden, and many others, it has been fully demonstrated, I think, that diphtheria is caused by a linear or rod-shaped micro-organism, about as long as that of tuberculosis, but considerably thicker. Being a rod-shaped microbe it is termed a bacillus, and named the Klebs-Löffler bacillus in honor of Klebs, who announced its discovery, and of Löffler, who first studied it bateriologically.

"This bacillus presents aspects which to the experienced eye are characteristic. It often has a granular appearance, and is stained in two minutes by the violet of methyl ; it often exhibits a more intense coloration of its extremities than of its central parts, and its extremities are sometimes swollen so as to present a dumb-bell appearance, or only one extremity is swollen, so that it has the shape of a pear or gourd ; occasionally it is curved like an arc."‡

*Keatings Encyclopœdia of Children, vol. 1, p. 586.
† Ibid.
‡ I. Lewis Smith, in Jour. Am. Med. Association, vol. xvii, p. 25.

This bacillus is devoid of independent motility. It presents itself both in the membranes and in the cultures *of every primary case of diphtheria.* "It grows upon ordinary culture media, best upon Löffler's blood-serum and bouillon mixture, but it will grow even upon steamed potato. It will multiply readily in milk. It does not multiply, or it does very sluggishly, at a temperature below 64°F. It is killed by exposure for ten minutes to a temperature of 136°F."*

While it forms no spores and does not readily propogate itself without the body, it is among the most resistant of the non-spore forming class, withstanding for a long time drying and other influences destructive to the less resistant forms.

This fact is in keeping with the clinical observation that clothing and rooms, and other objects may retain for months the virus of diphtheria in an active state, even when the apartments, clothing, etc., are dry. It lives still longer in a moist state, hence damp dwellings, as has long been observed clinically, are the favorite camping-ground of these germs. They may remain viable in such a soil for more than a year.

These bacilli alighting on the mucous surface, or on the skin denuded of its epidermis, find a nidus favorable to their propagation. They are conveyed from the body in particles of diphtheritic exudaticn, in the saliva, and the mucus and pus discharged from the nose and throat. In this way they become attached to the clothing, bedding and person of the patient or to the clothing or person of the attendant. The virus adheres in like manner to the walls and furnirure of the room, where it may remain active for a long time. There seems to be no proof, nor is it probable that the germ is contained in the breath of the patient, except as in the act of coughing or sneezing particles become detached and are expelled. Prof. Welsh says it has been proved experimentally that the expired air is incapable, during ordinary respiration, of detaching bacteria from the moist mucous surfaces over which it passes. The germs may of course be carried in drinking water, milk, food, etc. When taken in the inspired air, as is probably sometimes the case, it is by their becoming thoroughly dried, so that they float as dust with the particles to which they adhere. Prof. Welsh says that "the diphtheritic bacillus withstands for months desiccation which is so injurious to the cholera vibrio and to many other species of bac-

* Prof. W. S. H. Welsh—"The Causation of Diphtheria."

teria." We cannot therefore doubt that there is real danger of air infection with the diphtheritic bacillus ; but at the same time it is held by bacteriologists that this is not a common means of contagion ; but that it is nearly always produced by contact.

The diphtheritic bacillus develops only locally at the seat of infection, and, unlike that of typhoid fever, does not invade the tissues or the circulation. It is found only in the diphtheritic membrane, and not in the subjacent mucous membrane. Another matter of importance is that it *is found only in the superficial layer of the membrane.* These facts seem to settle the old dispute, Is diphtheria a local or a constitutional disease? It is beyond question primarily a local disease. The germ which causes the disease not only makes its first appearance and multiplies where the false membrane is formed, but it is not subsequently found in the blood or other tissues. It cannot of itself produce systematic infection, but as a venomous reptile produces a poison which it communicates by its fangs, so it produces a chemical poison of great virulence, which is readily taken up by the blood-vessels and carried through the entire system. It is therefore primarily a local disease, but, secondarily, and very early, it becomes also a constitutional malady. This chemical poison or toxic substance is not a ptomaine ; it is not crystallizable nor alkaloidal. No such substance has been found in cultures of the bacilli. It is a proteid, which is precipitated by alcohol and by saturation with ammonium sulphate and sodium phosphate. It is soluble in water. It is a white amorphous mass of light specific gravity. It is not volatile and can be preserved for months in the dry state without loss of its characteristic properties. (Welsh.) When this substance is injected into animals it produces all the symptoms capable of being produced by injections of pure cultures of the diphtheritic bacilli, with the exception of the pseudo-membrane. For the production of this membrane the bacilli are necessary, but all the constitutional disturbances, such as serous effusions, ecchymoses, paralysis, etc., follow inoculation with the toxic albumin. According to Brieger and Fränkel this virus is allied in its composition to ichthyotoxicon, the poison secreted by seaeels. Many years ago Trosseau noticed this resemblance and related an instance in which seamen became paralyzed, some of them for three

months, from eating a cooked eel. He pointed out the resemblance to diphtheritic paralysis.*

I have said that in every case of true primary diphtheria the Klebs-Löffler bacillus is to be found as the promoting agent. There is a form of disease, which as regards its anatomical characters appears to be identical with that in true diphtheria. The difference, however, from a bacteriological standpoint, is wide. In the latter there is an absence of the Klebs-Löffler bacillus, and a number of other kinds of microbes are to be found. In this form of diphtheria a different chemical poison, if any, must be generated, for it is noted clinically that paralysis does not follow as in the case of true diphtheria. In order to distinguish the two diseases it has been proposed to denominate that form of diphtheria in which the Klebs-Löffler bacillus is absent pseudo-diphtheria.

This latter disease is most apt to occur in the course of eruptive diseases, and especially in scarlet fever. Clinically it is often hard to distinguish from true diphtheria, but it is stated with confidence by those who have made it a study that bacteriological examination will reveal the distinction. It was this form of disease which led Prudden and others to deny the constant presence of the Klebs-Löffler bacillus in diphtheria, and which for several years threw the whole subject in doubt. These observers now admit their error, and no longer hold that the streptococcus, slaphylococcus and other cocci are the cause of diphtheria. They fully agreee with Klebs and Löffler. Dr. J. Lewis Smith, one of the most patient of investigators on the subject, says:

"The disease heretofore designated diphtheria we must now regard as two diseases, to wit: diphtheria resulting from the action of the Klebs-Löffler bacillus, and pseudo-diphtheria, resulting from the agency of other microbes, or else we must recognize two forms of diphtheria, the one caused by the Klebs-Löffler bacillus, and the other by other microbes."

We should not forget that so far as investigations have carried us, there is no evidence that the poisonous albuminoid generated by the Klebs-Löffler bacillus, which causes the intoxication in true diphtheria, is produced by any other microbe. The one therefore would appear to remain a local, the other to rapidly become a constitutional, disease.

Roux and Yersin, who have made elaborate investigations

* I. Lewis Smith, Med. Record, vol. xvii, page 26.

concerning the cause of diphtheria, claim to have found a bacillus, resembling, if not identical, with the diphtheritic bacillus of Klebs and Löffler in its behavior on culture media, but which is incapable of killing animals. They consider it an attenuated form of the diphtheritic bacillus, and designate it the pseudo-diphtheritic bacillus. Prof. Wm. H. Welsh found in two cases of diphtheria what appeared to be the Klebs-Löffler bacillus, mingled with large numbers of the golden pyogenic staphylococci. He discovered in these cases an absence of pathogenic properties when the virus was injected into guinea pigs, and he consequently propounds the inquiry whether the virulence of diphtheritic bacilli may be modified by the presence of the bacteria. To me this is one of the most interesting lines of bacteriological thought. Shall we some time in the future be able to discover what germs are antagonistic to others, and also be able to utilize such knowledge in the cure of disease? Shall we yet be able when the human citadel is assaulted by and ready to succumb to an army of bacilliary invaders to come to the rescue with another army of friendly microbes? If so, let God and science speed the day! Should this hope be fulfilled, this dream realized, the doggerel of the wag:

> "These fleas have other fleas to bite 'em,
> And these again have other fleas,
> And so on *ad infinitum*,"

will become a scientific verity.

A recent writer in the *British Medical Journal* has contributed an article on phagocytes. He holds that certain bodies known as macro-phages, and micro-phages make constant war upon microbes. The micro-phages are credited with going out and gathering up the microbes, and returning them to the macro-phages, which devour them.

As bearing upon the subject of the antagonism of different species of germs, it is interesting to note the experiments of Dr. Balchinski (reported in *Medical Annual* for 1891, page 146). He noticed while attending his own son sick with diphtheria that a rapid change for the better occurred coincidentally with the appearance of facial erysipelas. This suggested to him the idea of inoculating diphtheria cases with blood taken from patients suffering from erysipelas, and he found that cure resulted in each case. He has since inoculated several cases with cultures of the microbe of erysipelas, with satisfactory results in curing diphtheria, pseudo-mem-

branous laryngitis: or is every case of membranous croup, so-called, really diphtheria? I think the preponderance of medical belief has been in favor of the latter claim, but it now appears to me that as a result of bacteriological investigation we may safely say that there is another disease, a pseudo-diphtheritic laryngitis, produced by other germs than the Klebs-Löffler bacilli; a disease in which, so far as yet known, no toxic substance is generated, and in which, when systemic poisoning ensues, no paralysis results. In this disease, I believe systemic infection is quite unlikely to take place, and when it does occur it is by the germ, the streptococcus which produces it, invading the blood and tissues. In that event it may produce broncho-pneumonia, a disease often secondary to croup, or ulcerative endocarditis and suppuration of the lymphatic glands.

But all cases of croup are not of this kind. It may occur as true diphtheria, produced by the Klebs-Löffler bacillus, even when pseudo-membrane is not found in the larynx or upon the tonsils. The bacilli were found in the pharynx in two cases examined by Drs. Welsh and Abbott, when no false membrane occurred save in the larynx. Those were cases of true diphtheria.

While on the cause of diphtheria I should hastily say before leaving the subject that much clinical evidence has accumulated within the last few years to show that diphtheria may be communicated by the lower animals, as turkeys, pigeons, cats, and even cows. Several milk epidemics have occurred recently, and Klein, of England, has attempted to support by experiment the theory that the cows yielding the milk were sick with diphtheria. As this is in conflict with all our knowledge of the Klebs-Löffler bacillus, it is more reasonable to suppose that the milk was infected by persons having the disease. I have already shown that the Klebs-Löffler bacillus does not enter the circulation, and that inoculations with the toxic albumin which does enter the circulation does not produce the local evidence of the disease — the pseudo-membrane.

I have gone so fully into the cause of diphtheria that I cannot consider at much length other phases of the disease without encroaching upon your time and wearying your patience. I wish, however, to say a few things upon the subject of treatment, and I will be as brief as possible.

TREATMENT.

The first thing to be considered is the apartment into which the patient is to be placed. The room should be large and airy and well ventilated. The carpets should if possible be removed from the room, and the evacuations should be promptly disinfected by chlorine or carbolic acid and removed from the room. All handkerchiefs, or linen or muslin cloths used in place of them, should when soiled either be burned or placed in boiling water. The patient, even in mild cases, should be kept constantly in bed, and the temperature of the room kept at 65°-70° F. The patient should of course be promptly isolated from all other persons except the attendants.

As to remedies, I prefer the use of tinctura ferri chloridi, in all septic cases, given in large doses. I have seen cases of apparently the most profound septicemia recover under large doses of this remedy. Whiskey or brandy should also be given in large doses. I know of no disease in which larger doses can be borne, owing to the intoxication from the diphtheritic poison. Pallor and feebleness call for an increase in the dose. For the fibrenous form turpentine is one of the most useful of remedies, and next to it stand resorcin and corrosive sublimate. Indeed, I am inclined to think that the latter will give more general satisfaction than any other remedy at our command. I am in the habit of administering it in rather full doses, say one-twentieth grain every two hours to a child four years of age.

Concentrated foods are indicated. Milk, egg-nogg or meat-juice, should be administered every two or three hours, at the same time the appetite should be stimulated by bitter tonics. Food must be taken at whatever cost, even if punishment must be threatened to compel the use. Where the dysphagia is great rectal alimentation of predigested food should be resorted to. If stomach digestion is weak, it should be aided by preparations of pepsin, or predigested foods should be administered. When paralysis renders swallowing difficult or impossible, the feeding tube should be promptly resorted to, and continued several times a day until the function is fully restored. In one case of a lady of over sixty years of age, in whom swallowing even the smallest quantity was impossible, I used a stomach tube and pump three times daily for four weeks and was rewarded by having my patient make a good

recovery. Though that was eight years ago, she is still living. She was completely paralyzed and she owed her life entirely to the food and medicine administered through the oesophageal tube. I have seen the happiest results from feeding in this way in cases of children.

Strychnia should be administered early as a heart tonic. The experiments of Prof. H. C. Wood show that we have no heart tonic superior to this drug. In threatening heart failure it should be administered in large doses. When the heart suddenly becomes weak nitro-glycerine should be given as a stimulant to arouse it to renewed action. Electricity is called for in sudden failure of heart action as well as in the slower and less fatal paralysis.

### LOCAL TREATMENT.

Clinical experience, as well as bacteriological data, has taught the importance of this form of treatment. Diphtheria being primarily a local disease and the germ being superficial and easily accessible, the importance of early local treatment cannot be overestimated. No doubt if sufficiently prompt and active local germicidal treatment could in all cases be instituted, diphtheria would remain as it began, a purely local disease. This in the nature of things cannot usually be done, but means should early be adopted to disinfect the pseudo-membrane and the surrounding and underlying tissues affected. The remedies used should be unirritating yet solvent in their action. Pepsin in combination with an acid, and trypsin with an alkali are excellent solvents. The remedy which I most frequently use is lime-water made more alkaline by combining sodium bicarbonate and sodium benzoate, and then adding carbolic acid and glycerine. I believe this mixture thoroughly and frequently sprayed upon the diseased parts to be of undoubted benefit in dissolving the membrane, disinfecting the parts and lessening the danger of septicemia. It should be applied very frequently and thoroughly and the physician should himself see that it is properly done. A matter of such vital importance must not be entrusted to incompetent and indifferent attendants. In the gangrenous forms characterized by great fetor we possess no other remedy comparable with per oxide of hydrogen, which may be applied in full strength to the membranes and surrounding tissue. It not only acts as an excellent antiseptic and germicide, but promotes the early exfoliation of the pseudo-membranes. In the nasal

forms the alkaline mixture above recommended, or some suitable substitute, should be carefully and frequently injected with a bulb syringe. The one I here exhibit I prefer to all others, as its use is attended with less danger to the Schneiderian membrane, which we should protect against a breach of continuity, owing to its great absorbing tendency. The injections, as well all applicatious to the throat, should be given with the patient in the recumbent position, so as to put no unnecessary strain upon the heart.

As a result of these premises the following conclusions are drawn:

1. Diphtheria is a specific, infectious, and contagious disease, produced by a microbe, the Klebs-Löffler bacillus. It is primarily a local disease, but constitutional infection rapidly ensues, from the production of a toxic albumin which enters the circulation, and produce the constitutional symptoms, local and general paralysis, etc.

2. There is another disease, which as regards its anatomical characters, seems to be identical with true diphtheria. This disease occurs most frequently in the course of eruptive fevers, especially scarlet fever, and is not to be confounded with the necrosis or gangrene, the latter disease. It is a fibrinous exudation, and is produced by other microbes than the Klebs-Löffler bacillus. No toxic albuminoid, so far as is now known, is developed by the germs of this disease, and paralysis does not follow as in the case of diphtheria. The name proposed for this disease is pseudo-diphtheria.

3. It having been fully demonstrated that diphtheria is a highly contagious disease, and that it is produced by a germ having wonderful vital tenacity, the patient should be isolated immediately and unnecessary fabrics and other objects, especially such as are difficult to disinfect should first be removed from the room where the patient is placed. Great care should be exercised to prevent the soiling of the clothes and person of the patient and the attendant, and all soiled garments should be thoroughly disinfected or burned. Great care should be taken that the discharges containing the diphtheritic germs do not become dried or desiccated; also the disease may be conveyed through the air.

4. There should be in every city a public disinfecting establishment, constructed on scientific principles, and in charge of competent men employed by the Board of Public Health.

When epidemics of diphtheria are prevailing, the disinfecting of the houses is which diphtheria occurs, as well as all articles of bedding and clothing used therein should be done under the direction of the medical officer of the Board of Health.

5. No public funerals should be permitted in cases of death from diphtheria.

6. As there is much clinical evidence going to show that diphtheria may be communicated by the lower animals, children should be guarded against this danger as far as possible. No domestic animal suffering with a throat or nasal trouble should be allowed to be fondled and petted by a child.

7. When diphtheria is prevailing in a community great care should be exercised that it be not spread by attendance at public and private schools. At such times the throats of all children should be inspected each morning when they enter school, and upon the slightest suspicion they should be sent to their homes. Of course no child should be permitted to attend school when diphtheria is existing in the household.

8. Diphtheria being primarily a local disease, early efforts should be adopted to prevent the development of the toxic principle whereby it becomes a systemic disease. To this end the attendant should be summoned at the earliest indication of invasion, and reliable germicides should immediately be applied. The public should be educated to know the importance of early summoning the attendant, and the dangers of delay in the treatment of this dangerous malady.

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AUGUST 17, 1891.

A special meeting was held in the society rooms at 8 o'clock P. M. There were present: Drs. Faulds, President; Taylor, Murphy, Guthrie, Harvey, Weaver, Kirwan, Long, Barney, Roe, Johnson, Mahon, Dodson, Ruffner, Clark, Stewart, Knapp, Davis, Corss, Gibson, Howell.

Visitors: Dr. H. V. Logan, of Scranton.

Dr. Barney was elected secretary pro. tem.

The president opened the meeting by stating the reason of the special gathering, and after a few feeling remarks on the great loss the society has sustained in the death of Dr. Edward

R. Mayer, one of the society's founders and greatest benefactors, called for remarks from the members.

On motion of Dr. Taylor, Drs. Guthrie, Corss, Davis, Stewart and Weaver, were appointed a committee to prepare suitable resolutions and report at the next meeting.

Appropriate remarks were also made by Drs. Guthrie, Corss, Kirwan, Weaver, Logan, Mahon, Murphy and Taylor.

On motion it was voted to attend the funeral in a body, and Drs. Taylor and Guthrie were appointed a committee of arrangements.

Adjourned.

DILBERT BARNEY, Secretary pro. tem.

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AUGUST 19, 1891.

Regular meeting. After other business Dr. Guthrie, chairman of the committee on the death of Dr. Mayer, read the following resolutions, which were duly adopted by a unanimous vote.

MORRIS GIBSON, Secretary.

Again the members of the Luzerne County Medical Society are called upon to give up a valued member, Dr. Edward R. Mayer. This is no ordinary bereavement for Dr. Mayer was no ordinary man. He possessed brilliant natural gifts and powers which were enlarged by a liberal education in early life, and by diligent and studious cultivation even in the midst of the most engrossing professional duties. Never satisfied with present attainments he continually added to his requirements in professional knowledge, as well as in modern science, literature, and art. Having a tenacious memory he was easily conversant with the latest discoveries in all the branches of learning which engross the labors of the specialist and expert, and his views grew constantly broader and more comprehensive by the assimilation of knowledge covering the domain of human thought. Calm and dignified in his bearing, skilled in learning, and wise in knowledge, truly majestic in his nobility of character, he walked among us head and shoulders above ordinary men.

A founder of the Society, he was ever one of the most honored members. Sad indeed will be the loss of his wise coun-

sel in time of trouble and confusion; bitter the grief that will come to us when we miss his cordial greetings in the sick chamber, in the consulting room, and at our professional gatherings. His memory is truly sweet. He has left his impress on all that came in contact with him. The weak met him only to take courage and renew the struggle of life; the poor found in him kindly sympathy and material aid; saddened hearts were cheered by his words of comfort. The sick ever found him a strong tower and rock of defence. He rejoiced with them that did rejoice, and wept with them that wept.

Though subscribing to no particular religious creed he was a perfect exponent of that best of creeds, "Love to God and love to man." His great heart beat in sympathy with everything that affected the human family. He scorned meanness and narrowness, hated injustice and oppression, and loved and cherished everything that tended to uplift, relieve and ennoble his kind. In his presence, contentions dropped out of sight. His kindness to all his professional brethren was reflected upon all who came in contact with him. May his memory fell as a mantle upon us all, and the kindly fraternal feeling be so much nurtured ever remain with us.

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## VENESECTION.

By A. A. Barton, M. D., Plains, Pa.

[Read Sept. 2, 1891.]

Our knowledge of blood-letting dates from the time of Praxagoras, five hundred years, B. C. We are told that to Antylus belongs the honor of first distinguishing the proper veins for phlebotomy and that from him Brissoit obtained the knowledge which enabled him to note the good effects of abstracting blood as near as possible from the seat of injury or inflammation. Thus we learn that venesection is as old as the practice of medicine itself. Four hundred years ago the barber surgeon, equipped with the cupping glasses, the lancet and the leech was an essential member of the medical profession. Two centuries later his surgical duties ceased, the surgeon claiming that it was essentially a part of his office. But for a long time after his relation to the profession was maintained by constituting him a member of the hospital

corps, as we see by a statute passed in 1627, regulating the management of Heriot's Hospital, referring to the list of officers in that charity thus: "One chirurgeon barber who shall cut and poll the hair of all the scholars of the hospital, and also look to the care of all those within the hospital who shall in any way stand in need of his art." The striped pole symbolized the lather, the blood and the blue ribbon, which encircled the arm in the operation of phlebotomy. We have the emblem with us to-day, but the barber has long since been limited to his strictly tonsorial duties. We might be pardoned here if we were to say the physician of the present day is about as guiltless of drawing blood as the barber, although he is sometimes charged with bleeding his patients in a far more sensitive locality than the arm or jugular vein.

It is not my purpose to discuss within the limits of this paper the philosophy or the modus operandi of blood-letting, but simply to illustrate, or rather to enunciate, the fact that while it may have been practiced to excess in the past, we are now committing a far greater error by our wholesale abandonment of so valuable a therapeutic agent as venesection. Once started the ball has kept rolling and the profession has floated along with the tide of ever changing fashion, carrying with it the sympathies of the general public, which has interested itself just enough to imbibe prejudices against old and well tried means and methods of practice. With the advent of the new much that was old and valuable has been discarded—in winnowing out the chaff the wheat has gone over also. The extent to which the antiphlogistic treatment of disease was carried up to the early part of the present century and the subsequent reaction, which has finally culminated in an opposite extreme, fully illustrates the tendency on the part of the profession to swing from one extreme to another. Certainly this radical change in the practice of medicine has not been in accordance with any change in the constitution of man or of the type of disease. Pneumonia, pleurisy and puerperal eclampsia are the same to-day they were centuries ago, and why will not the lancet give as good results now as then?

Those who talk of the "outrageous abuses," of the "indiscriminate blood-letting" of the past, should ask themselves if they are not committing as great an error by their indiscriminate use of such drugs as antipyrine, antifebrin and many

other remedies of untried and questionable repute. We seem to have lost sight of the fact that far back in the past was concieved the science which is born to day, that nearly all the best established principles of practice were first developed from clues which nature gave us. The relief following a profuse perspiration and a spontaneous diarrhoea first suggested a resort to diaphoretics and intestinal evacuation. The relief afforded by an attack of epistaxis or other accidental hemorrhage first opened our eyes to the utility of venesection.

The earlier practitioners observed Nature, drew their conclusions from and based their practice upon her teachings. If we consult the writings of the most distinguished authors of that period we find then imbued with the spirit of the age, abounding in sound reasoning and wise instructions for the observance of indications and contraindications for the use of all active remedies.

Sir James Paget and others of equal celebrity bear testimony to the harmlessness of venesection upon the healthy economy. In a series of experiments for the purpose of determining the effect of the loss of blood up the point of syncope upon healthy adults, Sir James says: "I think I can surely say that not one of these persons suffered any harm from the operation." If then the abstraction of blood, instead of being the dangerous practice represented by those who talk about its depressing effects without ever having tested it, is comparatively harmless in health, how essentially important it may become when an internal vital organ is struggling under the embarassment of extreme engorgement. The once common practice of bleeding healthy adults suffering from general plethora always afforded relief, and no doubt many times averted an attack of cerebral congestion or apoplexy.

Fothergill and Haberdeen assert that sudden death has greatly increased in England since bleeding in the spring and autumn have gone out of fashion. "I am convinced" says Tilt, "that the sufferings of many women are aggravated from bleeding never being resorted to, especially about the time of the menopause, when nature seems to demand a substitute for the habitual flux which has subsided." Women under these circumstances will bear immense losses of blood without injury and the danger of establishing a habit necessitating the frequent abstraction of blood has been greatly overrated. Many cases of local congestion or incipient inflam-

mation in both sexes from injuries or colds are immediately relieved by venesection.

Before the introduction of anesthetics obstinate and long-standing dislocations were readily reduced after a good bleeding. The specialist of to-day recognizes the benefit derived from the local abstraction of blood from an injured or inflamed eye.

I am of those who believe that pneumonia in its incipent stage can be abated, and at later periods may be limited in its area by proper treatment. For we know by experience that as long as the disease is not checked by artificial means it may not come to a happy crisis, but will go on from day to day invading new territory so that we may have the disease progressing in its several stages at the same time in the same individual. Now it is this which we should aim to prevent, and what means have we that will do more towards accomplishing the end than bleeding? By removing a portion of the circulating fluid we lessen the labor to be performed by the healthy lung, diminish the vascular distention and relieve the overcharged capillaries, thus hastening normal resolution and unloading the congested and rapidly solidifying lung. Whether pneumonia is better treated now than it was fifty years ago is in our mind a question not yet answered. Statistics are proverbially unreliable. So many facts are involved that figures prove nothing. Certainly it was not the dreaded disease half a century ago that it is to-day. The alarming mortality of pneumonia among wholesome livers in the higher walks of life; the sudden and unexpected collapse of vigorous constitutions after a few hours illness from pneumonia, circumscribed and involving, perhaps, only a portion of lung, with no other organic lesion, is, to say the least, but a sad commentary upon the efficiency of our art. Our modern therapeutics may not be responsible for these results, but I believe with Dr. Atlee, "That if we depended more upon the early use of the lancet in this disease we would meet with far greater success than we now do." As yet there is no agent that will supply the place of the lancet in all cases to which it is adapted. Veratrum has not sustained its reputation as a substitute for venesection, nor can it justly claim superiority as a heart sedative or general antiphlogistic over the old and well tried tartar emetic if properly administered. Admitting all that is claimed for it many times, it has to be entrusted to

unskilled nurses with conditional directions for its administration, and we have cause to regret ever having given it—a thing that can never be said of the lancet.

The propriety of bleeding in cerebral congestion or apoplexy depends wholly upon existing indications in individual cases which should not be disregarded by the intelligent physician. I for one have had no experience with bleeding for a name instead of a condition. In the apoplexy of old persons where there is senile wasting with or without atheromatous degeneration of the arteries no discrete physician would bleed, but in apoplexy of full habits where there is a hard bounding pulse, a suffused countenance, coma and paralysis, bleeding is indicated just as much as it ever was. We cannot expect to cure cerebral degeneration or remove an embolus, but how are we to know that an embolus exists? It may be only extravasation upon or into the brain substance, then by bleeding we would moderate the action of the heart thus causing it to send a milder current to the head and in this way arrest the process of extravasation. You will find after a thorough bleeding in cases of this kind the face pales, the pulse becomes soft, the coma and stertor subsides, consciousness returns and the patient gets a new lease of life.

Only a short time ago I was called to see a stout thick-set man about fifty years of age, and found him suffering from a stroke of apoplexy. From the family I gained the following history: He had not been feeling well for a week past, complained of dizziness and headache, and during the day of the attack the family had noticed his speech was affected. About eight o'clock in the evening, while walking across the floor, he fell and did not attempt to rise. He was immediately taken up and placed in bed and I was summoned. I found him breathing heavily, comatose, with a hard bounding pulse. I bled him freely, taking about sixty ounces. His breathing became natural, his face pale, and the pulse soft, and after waiting about twenty minutes I had the satisfaction of seeing my patient open his eyes and indistinctly ask, "What was the matter?" I then prescribed a brisk cathartic, full doses of bromide of potash and ergot and left my patient for the night. The next morning I found him very much improved, could speak quite distinctly and was entirely conscious. This is only one of several cases I have treated by venesection and always with good results.

Now, Mr. President, I come to the most important part of my subject, viz: The use of the lancet in puerperal convulsions. Wrote the venerable Dr. Meigs, "If there is a disease in which a bold and daring employment of the lancet is imperatively demanded it is in a case of puerperal convulsions."

We know puerpural convulsions of a hysterical form occur in a class of women who do not require bleeding, or who will recover under any form of treatment, but true eclampsia of epileptic or apoptectic form requires the most prompt and vigorous action. A few moments or a single spasm may produce irreparable injury to the nerve centers, but when we know that by the abstraction of blood we can modify the action of the heart, reduce the force of the circulation, and thus lessen the amount of blood forced into the brain from which we have so much to fear, we can feel a great point has been gained ; and if the mischief is not too great we have a chance of saving our patient's life.

I shall never forget my first case of puerperal convulsions a primapera, aged 20, weighing about 140 pounds, who had always been the picture of health. I had been consulted about one week previous to her confinement on account of the feet, legs and face swelling. I found the feet and legs swollen to an enormous size. I examined the urine and found it loaded with albumen, about sixty per cent. I immediately put her upon proper treatment and diet, doing all in my power, but, as many of you no doubt have learned in such cases, accomplishing little. When finally called to attend her in labor I went fearing the worst. I found my patient had been in labor some hours, examination showing she had made but little progress ; the os was rigid and dilated only so as to admit one finger. My examination made her very nervous, and before I was aware of it, my patient was in a convulsion. The face at once became suffused, the veins turgid, the temporal arteries throbbing violently, the eyes jerking, the inspiration hissing, and bloody froth issued from between the closed teeth. I asked myself what shall I do? Shall I trust the treacherous truce purchased with chloroform, chloral or, the slow and uncertain action of veratrum, digitalis or the bromides? When I know that extravasation of blood or effusion into the ventricals of the brain will soon take place ; or shall I follow the advice of my old preceptor, which was, "If you ever have a case of puerperal convulsions in a strong, healthy woman of full habit, by all means bleed, and do not be afraid of taking too much blood—bleed until the face pales and the pulse becomes soft." I bled and my patient still lives.

I have since bled many times in such cases and never regretted it. I am sorry to say in some cases where I did not bleed, but trusted to other means and remedies, I lost my patients. I have had eight cases of true puerperal convulsions in 1833 cases of labor. I have bled in all but three cases and lost two out of the eight. Unless we question the veracity of the authorities whom I have quoted we must accept these as facts, and "time can never make that fiction which was once a fact."

In confining myself to the practical features of my subject I have preferred to deal with facts rather than theories. I know that I am striving against powerful odds and that I am not a match for numbers. I am seeking truth not honor. I am laboring for my profession and for suffering humanity not for self. I must say I have never used the lancet where I had cause to regret it.

As practical physicians it is our duty to hold fast to all that is sound and good of the rich harvest of the past; seize upon and embrace all that is valuable of the improvements of the present; looking forward for better and nobler achievements in the future.

DISCUSSION.

Dr. Rogers made an attempt to bleed a very fleshy lady early in his practice, but could not find the vein. She informed the doctor that she had been to six or eight others, all of whom had likewise failed. Barbers have not entirely ceased to act as bleeders.

Dr. Matlack thinks blood-letting an efficient therapeutic measure in selected cases. It is very depressing and should not be used in wasting diseases. He related a historical case in which a patient had been bled several thousand times. He has patients who come to him once a year to be bled, and one who desires to be bled on each side, so as to get the blood out of each. He has used it in puerperal convulsions with good sucess. In the present age there is more danger from the neglect, than from the use of venesection: it is especially indictated in plethoric females, and is often of value in disorders of menstruation.

Dr. Murphy had been much interested in Dr. Barton's paper. He has had but little experience in venesection, limited to cases of puerperal convulsions, where he believes it to be very beneficial in selected cases. He would take issue with the essayist in bleeding in apoplexy due to cerebral hemorrage. After a clot has been formed, it seemed to him to be inadmissable to bleed:

Dr. Hakes had, early in his professional life, practiced for two or three years in New York state, where there were no malarial diseases as here, but where pleurisy, pneumonia, etc. took their places. He secured admirable results from venesection. The relief was so apparent that people formed the conclusion that it was beneficial in everything. Now we have so swung to the other extreme that it takes a bold practitioner to use this remedy when he should. He is glad that Dr. Barton has taken this stand and hopes the profession will stand by him. We must go back to this remedy in cases that are fearfully fatal. When the patient can take in a full breath, the disease is practically stopped : the lancet is a wonderfully potent remedy in such cases. He is in the habit of bleeding in all cases of pneumonia, and the only fatal case that he has had was one where he did not bleed, because the patient was a delicate boy. In inflamations of the brain, and in apoplexy he cannot concieve that much harm could result by removing the pressure from the clot. Injuries of the head especially, it is well to be prepared to meet the inflamation, or to be ahead of it. He never thought much of local bleeding : in eye troubles, for example, general bleeding is better then leeches.

In the former days there were quacks as now, and they would bleed in all cases without regard to indications, till finally the abuse was so great that the profession neglected venesection altogether. We are all under obligations to the essayist for his able paper.

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Vol. III

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# TRANSACTIONS

OF THE

# Luzerne County Medical Society,

FOR THE

## Year Ending Dec. 31, 1895.

# TRANSACTIONS

OF THE

# Luzerne County Medical Society,

FOR THE

Year Ending December 31, 1895.

ORGANIZED MARCH, 1861.

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## RESOLUTION.

At the annual meeting held January 9, 1895, the following resolution was adopted:

*Resolved*, That the editor be authorized to secure the discussions at the regular meetings of the Society, and that a volume of transactions be published at the close of the year, provided the same can be done without expense to the general treasury of the Society.

# ADDRESS OF THE RETIRING PRESIDENT,

DR. W. S. STEWART, WILKES-BARRE, PA.,
ANNUAL MEETING, JAN. 9, 1895.

This being the tenth annual banquet of our society, and having heard the addresses of so many retiring presidents, it has been a serious question with me as to how I should treat the subject for to-night's address, without encroaching on the ideas presented by my predecessors.

There is no subject of so much importance to all of us as our society. To this I will call your attention to-night, and I hope the few thoughts I will endeavor to present to you will stimulate in you members a greater individual effort for the elevation of our society.

In Dr. Hollister's history of Lackawanna county I find, in the short sketch he gives of our physicians, an account of the first medical society started in this county, which is as follows:

"In 1855 a medical society, embracing the physicians of the upper end of then Luzerne county, was formed in Scranton with such able men as B. A. Bowton, A. Davis, Silas M. Wheeler, Washington Nugent and George W. Masser, all sleeping in the silent hills, as members. It dissolved in 1858. A few years since a new society, with the veteran Dr. Throop as president, sprang into being, and it bids fair to become an organization of mutual advantage to the public and the profession."

The new society referred to by Dr. Hollister is the Luzerne County Medical Society, which was organized in the court house at Wilkes-Barre on the 4th day of March, 1861. There were present at that meeting Drs. P. C. H. Rooney, Hazleton; H. P. Moody, Lehman; H. Ladd, C. Marr, Wm. Green, B. H. Throop, Scranton; G. Urquhart, W. F. Dennis, E. R. Mayer, C. Wagner, E. B. Miner, Wilkes-Barre; R. H. Tubbs, Kingston; S. Lawton, Pittston; A. L. Cressler, J. R. Casselberry, Conyngham. Dr. B. H. Throop was elected president; Drs. E. R. Mayer and A. L. Cressler, vice presidents; Dr. Urquhart, secretary; Dr. Wm. Green, corresponding secretary; Dr. Tubbs, treasurer.

There are to-day but three of the original founders of this society living, Drs. Throop, Urquhart and Cressler, neither of whom are identified with the society at the present time. In the early history the society held its meetings three or four times a year. Now we meet twice a month. Then they held their meetings at different places, one time in Scranton, then in Pittston, and then in Wilkes-Barre, meeting in offices, the court house, or wherever it was most convenient. Now we have our own bright and cheerful rooms, and everything to make it pleasant and agreeable for our meetings. Yet observe the attendance. It was larger in proportion to the number of members than it is at present, showing that these men, the founders of our society, although busy practitioners, took great interest in the work, and to them, by their assiduous zeal and labor, are we indebted for the conception and accomplishment of this society.

In comparing our work during the past year with previous years, I find that there has been, in some respects, a decided improvement. The fact that we have increased the number of meetings to two a month is an improvement over the past. But if we compare the *work* done by the members, it is not in proportion to the increase of members or increase in the number of meetings. In 1893 there were nine papers read before the society, and we had twenty-three meetings, which is certainly a very fair showing; while in 1894 there were seventeen papers and twenty-one meetings. Two of these papers were read by physicians not members of this society. Dr. Frauenthal, of New York, read the paper for the April meeting, while Dr. Stevens, of Philadelphia, that of the August or midsummer meeting. Now, if we go back as far as 1888, when we were having but one meeting a month, and compare it with the past year, we find that there were nine papers read, which is a decidedly better showing than in 1893, when there were but nine papers and twenty-three meetings.

With a society of nearly seventy-five members, the work done is certainly not what it should be. While the papers this year have been of unusual merit, and have brought forth liberal discussion, there is yet room for improvement in this direction.

How are we to bring this about? In the first place, it is important to have a good executive committee, as upon it depends largely the work of the society; but if this committee is careless or indifferent, our society suffers in consequence.

The good work done during the past year, which I believe to be the best in the history of the society, was most certainly due to the reorganization of the executive committee early in the year. And the sooner this committee recognizes the fact that it is partly responsible for the work done, the better it will be for the society.

Now, I do not wish to censure this committee alone for neglect of duty, for I have served on it, and know what it has to contend with, in order to impress upon the members the duty they owe to their society. I feel like placing the censure where it belongs, and that is upon the members themselves. If each member were to write a paper in turn, it would require three years to complete the circle. In other words, you would only be required to write a paper once in three years. This, surely, is not asking too much.

While it is well to advocate the *writing* of papers, we must go a step farther and advocate a *more liberal discussion* of the same. Frequently the members appointed to open the discussion come entirely unprepared. They get up and agree with everything the essayest has said, claiming he has fully covered the ground, and has left nothing for them to say. No body of scientific men ever gathered together agreed on all subjects; and surely our members do not differ from others in this respect. Now, let us give up this idea of a mutual admiration society, and when a man gets up and says something which you do not believe, have the courage to rise and tell him so. Every man should have an opinion of his own, and should feel free to express it. The discussions should be entered into freely by all the members; and let me say right here to the younger members, that they make a great mistake by not taking more part in the discussions.

During my visit to the Johns Hopkins Hospital this winter I attended a meeting of the Journal Club, composed of residents of the hospital, and I was much impressed with their

work, and the method which they pursue. They meet once a month, and at every meeting have from three to four papers on all the latest scientific subjects pertaining to medicine that have appeared in the journals during the month. After each paper is read there is a limited time given for its discussion. You can readily see the advantage this would be to the busy practitioner who does not have time to read his medical journals as carefully as he would like. If we could adopt something of this kind in connection with our society, it would make the meetings more interesting, and make us all more careful readers and better students. It would be the means of bringing before us, at an early date, all that is new in medical literature. While this suggestion might be carried out in our society, were the members, especially the younger ones, to interest themselves in it, yet I do not wish to convey the idea that it should do away with our regular papers. We might still have two papers for every meeting, or adopt the previous suggestion for the second meeting of the month.

It is a rule of the society that all papers read before it become the property of the society. Surely the men that incorporated this rule into the constitution and by-laws had some object in view. Naturally the preservation of the papers. But how many of you here ever turned your papers over to the secretary? What would he do with them if you did? Relegate them to the waste-basket of course. Occasionally a motion will be made that the essayist have his paper published, not taking into consideration the expense that is put upon that member in having this done. Consequently it is seldom published. Now, how are we to correct this evil? It has been suggested to me, by the member you have had the pleasure of electing editor to-night, that we publish all the transactions of the society each year. That will include all papers and all discussions. Naturally this will incur a large expense, but the editor is willing to undertake the task at his own risk, provided all the members give him their support by taking a volume of the transactions at the end of the year, at a nominal sum. Now, you can readily see the very great advantage this would be to our society, and not to the society alone, but to all the mem-

bers. These transactions will get abroad, and if you have written anything during the year, or offered anything new to the society, it will not be lost to the medical world, but will be read by others than members of our society. It will be an incentive to the members to write papers, and to be more careful in their preparation, if they know they are to be published.

I wish here to call attention to another evil I hope the society may see fit to correct during the present year. When a member reads a paper it is the custom for some one to move that "a vote of thanks be extended for his very able paper." This is perfectly proper and should be done when an invited guest reads a paper; but a member is not entitled to a vote of thanks for fulfilling his duty. It should be considered, instead of a task for which he receives a vote of thanks, an honor to read a paper before the society.

I do not dispute the fact that our society has done in the past and is still doing good work, but what we want is more of it. One of the many good things done during the past year for which we deserve credit, was the passing by city council the ordinance compelling the water company to give us pure water. This all came to pass by a paper read in our society on "The Purification of Drinking Water." When the city benefits by this ordinance, as she is bound to do, her people may well rise up and say, "Blessed be the Luzerne County Medical Society."

Now, we have another duty to perform, which is equally as great as the water question, and this is the agitation of a *Board of Health.* Think of a city with a population of 45,000 without a board of health! It is a duty we owe to the people, and it is a thing that will never be brought about unless we interest ourselves in it. When the present health ordinance governing the city, which was drafted by a member of our society and the chairman of the sanitary committee, was submitted to the medical society for its approval, it was considered better than none, and we admit that it has done a great deal of good; but it practically puts the physician under an uneducated so-called health officer. You report your case to the city clerk, and this so-called health officer assumes the

responsibility. This responsibility consists in tacking up a card, or reporting the physician when he fails to report his case.

I could dilate more fully on this important subject, but I only wish to bring it before you for your consideration, with the hope that you will, at an early date, see fit to take some action upon it.

I also wish to impress the important fact that no society can succeed without financial aid. Our dues are not exorbitant, but sufficient to cover all expenses if they are paid. Why is it that some members will neglect this duty? The society has obligations to meet, and one very important one is the assessment of the State Society. And this, the past year, we have been unable to meet, consequently we have not received the Transactions, all for the reason that certain members have not paid their dues for two years or more. I would suggest that the society enforce Article X, Sec. 1 and 2, of the Constitution, so that we will have more money in our treasury at the end of the year.

I cannot close this paper without reminding you that during the past year we have been called upon to mourn the loss of two of our members, Dr. Crawford and Dr. Jones. Both were active members in our society at the time of their death, and nothing I could write would add to the beautiful sentiments that have already been expressed by the different members of this society, showing the high esteem in which these members were held.

In closing, I wish to thank you all for the courtesy shown me during my administration. I wish you all a long life, and hope that the few suggestions made in this paper, although expressed in so simple a manner, will bear fruit and bring forth in the future better work, an increased membership, usefulness and honor to our society.

# DIPHTHERIA.

READ BEFORE THE SOCIETY, FEBRUARY, 1895,
BY DR. RICHARD P. TAYLOR,
WILKES-BARRE, PA.

*Mr. President, Members and Visitors of the Medical Society*:

The subject of my paper, namely, "DIPHTHERIA," which I have chosen to read before you to-night, is not an unfamiliar subject, neither do I think I can advance anything new regarding the etiology or treatment of this disease; yet diphtheria is a disease we, as physicians, are called upon very frequently to treat, especially in this city, and if I but only refreshen in your minds what you have already heard on this subject I consider I have done something palliative to suffering humanity. Diphtheria is a specific, infectious, contagious disease, characterized by a local fibrinous exudate usually upon a mucous membrane, and by constitutional symptons of varying intensity. The presence of the Kleb's Loeffler bacillus may be regarded as the etiological criterion by which true diphtheria may be distinguished from other forms of pseudomembranous inflammation. According to Wood and Formad this micro-organism was supposed to be a micrococcus, which belief was corroborated by Welch and Prudden, but it was shown later that these scientists had not seen the Loeffler bacillus but only the streptococcus and staphylicocci that are frequently found in diphtheretic membranes. The bacillus varies in length from 2.5 to 3 mikrons and from 0.5 to 0.8 of a mikron in thickness. Diphtheretic angina always starts as a local disease. From a pathological standpoint it is not admitted to be a general disease with secondary local manifestations, as is corroborated by experiments by Loeffler. Histologically, the changes are rather deep seated. Early there is a simple catarrhal inflammation, but in the fully developed process, the chief changes are deep seated, of a marked inflammatory nature. There is poured out considerable inflammatory exudate, which rapidly coagulates within the membrane, in croup upon the membrane; when

within the membrane it is generally supposed to coagulate within the lower layers of epithelium, as the upper layers are intact. This mass of coagulated or necorsed tissue undergoes a liquefaction necrotic process, and the entire mucous surface with its epithelium, submucosa, and whatever tissues are involved in the coagulum come away, leaving a rough surface of granulated tissue, devoid of a vestige of mucous membrane. Staining by Weigert's special fibrin stain, brings out the fibrin of this mass as blue lines, the rest of the elements remaining red.

So far as the name is concerned, the term croup is not applied when the alimentary canal (the pharynx) is involved, the term diphtheria being then employed. Croup appears in the larynx below the vocal cords (below the epiblastic portion of the mucous membrane). In the structure of the larynx, on account of the excessive amount of elastic tissue, the hyperaemia first induced is not apt to become very marked, and the exudate is readly squeezed out of the membrane, and the coagulation takes place on the surface of the membrane instead of in its midst. Further the laryngeal and tracheal glands are not affected, the exudate being expelled from their vicinity by the action of the elastic tissue. They are, however, in a condition of active function, and their hyper-secretion lifts off the pseudo-membrane, which may then be removed by coughing, etc. This explains why diphtheria manifests itself constitutionally, and why croup is dangerous only mechanically. "It may be compared to the nail on the board and the nail driven into it."

In diphtheritic angina there is a marked inflammation of the lymphoid elements, glands, etc., of the tissue, and the products are readily taken up by the lymphatics and carried throughout the system.

When a case of diphtheria gets well there is a loss of tissue; scar formation and some danger of stenosis from stricture of the aesophagus. The false membrane is not by any means characteristic of diphtheritic angina, but is found in connection with most of the exanthemata, especially scarlet fever. We also meet with cases of chronic diphtheria which are common in the bowel.

The disease, diphtheria, was known to Aretáeus and Galen. Epidemics occurred throughout the middle ages. It appeared early among the settlers of New England, and accounts are extant of epidemics in this country in the seventeenth and eighteenth centuries. It is a remarkable fact that while other contagious diseases have diminished within the past decade, diphtheria, particularly in cities, has increased. It is no respecter of persons, affecting rich and poor alike. The relation between imperfect drainage and the diphtheria poison has not yet been satisfactorily determined. Perhaps, as Thorne suggests, the faulty conditions produce sore throat of a benign character which, as in scarlet fever, affords a soil suitable for the inocculation by the diphtheria germ when present in the air. This author states that no prevalence of diphtheria has ever been definitely traced to polluted water.

No disease of temperate regions proves more fatal to physicians and nurses. The poison is given off in the pharyngeal secretion and in the saliva, but not in the breath. The particular danger to the physicians and attendants is in the examination or treatment of the throat, as the patient is liable to cough up either mucus or flakes of membrane into their faces. The virus attaches itself with great tenacity to clothing, bedding, or anything in the room. There is a wide spread belief among the profession that the disease may be communicated from animals, especially from calves and cats, in which belief I concur.

Some authors claim that the so called diphtheria of fowls is apparently not associated with the same germ as the human diphtheria, but from discussions lately heard in this society, and proofs brought forward, especially by Drs. Weaver and Faulds, I am inclined to the belief that it is. How are we going to stamp out this disease, besides other infectious and contagious diseases from our midst? Is the present sanitary ordinance adequate for the occasion? No, not by any means. It may be a step in the right direction, but a good few more steps have to be taken before we reach the summit of par-excellence.

Does the placing of a placard upon the outside of the building

deter neighbors from going in that house? No, it invites the inquisitive neighbor in to find out who is sick and what doctor is attending him or her. Another neighbor consoles herself by saying; I have no children, so I will drop in and see Mrs. So-and-So, little thinking how she may spread that disease to others who have children. I don't deny but what that placard is a good thing in itself, if the sanitary policeman would or could pay daily visits to the house to see that the letter of the law was carried out, and if violated have the parties punished; the punishment increased every time it is violated. But the sanitary policeman is not seen by the parties from the time it is placed there until notified by the parents that the child is convalescing, when he calls to make inquiry if the house has been disinfected properly. This latter clause was lately passed by Council. Now, I would like to know how the aforesaid officer can tell whether the room has been disinfected or not; the room may look clean, yet never have been disinfected, and the ignorant, negligent and careless will have no scruples in saying it has when it really has not. Another thing, is there one person in ten competent to disinfect a room the way it should be disinfected? One good feature in the ordinance is, should the case prove fatal, the burying of the body inside of 36 hours; the other two clauses, as at present carried out, are a mere farce.

What we want in this city is a Board of Health, with a medical officer at its head who understands what sanitary measures are and how they should be applied.

In a case of contagious disease, let a placard be placed on the house, let an officer employed by that board see that one competent person waits on the patient, and that neighbors are debarred from entering. He should be required to pay daily visits to the house to ascertain whether the law is obeyed or not.

The medical officer or a deputy should visit the public schools to see that there are no suspicious cases attending there.

Establish a public laundry in the suburbs, to be upheld by the city, where the bedclothes and other clothing worn by the

patient may be disinfected and washed at least once a week, and when the case ends in recovery or death, let the same thing be done with everything in the room that is washable. Then let a man skilled in the use of disinfectants be sent to disinfect the room or rooms and whatever else in the shape of furniture or pictures that may be contained therein.

Let the State vote us an appropriation so that an annex may be built to or in proximity to the city hospital which shall be used as a hospital for infectious and contagious diseases. Until such measures are used, or perhaps something better, like the poor "we will have diphtheria and other contagious diseases always with us." Before leaving the subject of sanitary measures, I would like to lay especial stress on the care a physician should exercise in attending such cases, that he does not spread the disease from house to house. I am not going to dictate what means he should use; what means might be convenient for one might not suit another; but let me say the disinfection of the hands alone is no safeguard, and I am sorry to say that to a great degree that is the only means resorted to.

TREATMENT: The various treatments of diphtheria are legion, therefore it will only be necessary to touch lightly on this subject. Every physician thinks his own treatment the best, otherwise he would not carry it out. In the number of cases which I have treated of pharyngeal diphtheria, I have obtained excellent results from the following treatment: Tr. Ferri. Chlor. in large doses internally, also using a spray of two parts hydrogen peroxide and one part listerine; administering alcohol in the form of whiskey; giving strychnia in large doses whenever there are the least signs of cardiac muscle poisoning; keeping the patient on a liquid diet consisting of Wyeth's beef juice, milk and various soups. I don't know but what it is good treatment to give strychnia from the start.

I have given mercury in conjunction with the Tr. Ferri. Chlor., either as the mild chloride, or the bichloride, but I am not prepared to say whether much benefit has been derived therefrom. Sublimations of calomel is another treatment highly spoken of by some authorities, but I have never used this treatment, consequently I can say nothing regarding it.

Benzoate of sodium is highly mentioned in the treatment of diphtheria. I have used the drug in laryngeal diphtheria internally, and in the steam atomizer in conjunction with trypsin, I think with good effect.

Antitoxine is the latest treatment we have for this disease. I have never used the remedy, and hardly think I would lay aside other remedies at this present date to experiment with antitoxine alone, until such time when it has been proven beyond a doubt that it is really a specific. You have all no doubt read the various reports in the different medical journals regarding the antitoxine treatment and the different tables of statistics where this treatment has been used. I think we, as general practitioners, should not be too hasty in grappling at every new fangled remedy that is put on the market, for we well know that there is nothing behind quite a number of them but mercenary gain for the discoverer, who, in many cases, becomes a patentee.

Many eminent men indorse the antitoxine treatment. On the other hand, it is condemned by Virchow, Rosenthal, Buchner, and Lemola, and other well known physicians who are authorities. Yet, if diphtheria can be cured by such immunizing agent as antitoxine is said to be, we shall greatly rejoice. But let us feel our way slowly, until the medical profession has undoubted evidence of its value. The principle of the treatment is not new, as you will see from the following, which I have copied from the New York *World:* "There is nothing new under the sun. Inoculation with antitoxine, it appears, according to a learned and ingenious correspondent of a Munich medical journal, is by no means new, nor even modern, having been employed by no less a person than Mithridates, King of Pontus. The authority for this statement is the Roman Naturalist Pliny, who relates that this monarch, for reasons known to himself, was afraid of being poisoned, and therefore made himself proof against all such attempts by gradually accustoming himself to all known poisons, producing the state known from him as Mithridatism. He was accustomed to make use of an antidote called Mithridaticum, whose principal ingredient was the blood of the Pontic duck,

this creature having been chosen because it had the reputation of living on poison. Here, therefore, we have the case of the blood of an immune animal being used to make another animal immune. Be this as it may, I hope the time will soon come when, by sanitary measures and medical science, diphtheria will be a disease of the past. Yet without becoming extremists, as the following from a medical journal may show, entitled "What we are coming to":

PUBLIC SCHOOL, FIRST GRADE, A. D. 1905.

Teacher to applicant for admission—"Johnnie, have you got a certificate of vaccination for small pox?" "Yes, sir." "Have you been inoculated for croup?" "Yes, sir." "Been treated with diphtheria serum?" "Yes, sir." "Had your arm scratched with cholera bacilli?" "Yes, sir." "Have a you a written guarantee that you are proof against whooping cough, measles, mumps, scarlet fever and old age?" "Yes, sir." "Have you your own private drinking cup?" "Yes, sir." "Do you promise not to exchange sponges with the boy next to you and never use any but your your own pencil?" "Yes, sir." "Will you agree to have your books fumigated with sulphur and sprinkle your clothes with chloride of lime once a week?" "Yes, sir." "Johnnie, you have met the first requirements of the modern sanitarians, and may now climb over yonder rail, occupy an isolated aluminum seat, and begin making P's and Q's as your first lesson."

## DISCUSSION.

DR. BUCKMAN.—A recent experience of mine has led me to take considerable interest in the diagnosis of diphtheria. Dr. Taylor said nothing of this in his paper. I am convinced it is rather difficult to make sometimes, and often impossible on the first visit. I have heard it stated that when the membrane or the exudate extends beyond the tonsils it is always diphtheria. About a year and a half ago I saw a patient who had both tonsils nearly covered with exudate, which extended onto the uvula. I promptly pronounced it diphtheria, and sent the patient to her home in Edwardsville, and in three or four days she was well, without any treatment; there were no sequelae, and no one else was infected. Recently I saw a patient whose case looked exactly like many cases of tonsilitis that I have seen, and on the first visit I pronounced it tonsilitis, but sub-

sequent events proved I was again mistaken. There couldn't have been any doubt as to the diagnosis of this case. It was treated by a member of our society, and I have been recently informed that there was decided diphtheritic paralysis during convalescence. Now the question that concerns us most, I think, is as to treatment. Recent statistics seem to indicate that the antitoxine treatment will be the treatment for diphtheria when it becomes accessible to the members of the profession. There seems to be no doubt as to the result of the use of this remedy, but until we can get it to use we must use what we have at hand; and there are practitioners who get good results from other remedies.

Dr. Taylor spoke of the use of mercury. I think the good effect of any remedy depends on how it is used, and mercury is one of the remedies that can be used with good effect in only one phase of diphtheria. Hare says: "The object of the treatment with mercury is to render the blood in such condition that the formation of the exudate will not readily take place." From this of course it appears that the remedy must be used early. It must be used in large doses, as diphtheritic patients are much more tolerant of mercury than the same individuals would be under other conditions.

I think it was a practitioner in Pittsburgh who first commenced the use of mercury in the form of calomel, and his results equalled the results now produced by the use of antitoxine, or at least they did a couple of years ago.

Chlorate of potash, I believe, is sometimes used in diphtheria, I doubt if with any good effect. The kidneys are always irritated and the chloride of potash seems to irritate them more. There is a member of our society present who has recently told me of treatment in which his results are as good as any one could hope for, and I trust we shall hear from him before we close the meeting.

Dr. Weaver.—So much is being written and said upon the subject of diphtheria, much of which is of a contradictory character, that, in the language of the Texas Congressman, we hardly know "where we are at." Not alone have we been startled by the antitoxine or serum therapy, but by the claims of such eminent men as Klebs, Löffler and Fanhout, each of whom presents what, according to their several statements, seems to be a specific for the disease under discussion.

Klebs, who is now sojourning in this country, contributes an article in the New York Medical Record of December 15th, 1894, fully explaining his "antidiptherine," from the use of which he claims greater results than has been claimed for the antitoxine treatment. He also points out in the same article what he claims to be a very serious objection to the use of antitoxine. He says that he succeeded in having a law passed in Austria that no animal vaccine virus should be used until the animal supplying it should have been killed and proof was furnished by an autopsy that the animal was healthy. If, he says, this is so important

where only such a small quantity of animal matter is used, how important must it be when as much as three ounces of serum are used in a single injection, as in the antitoxine treatment. He also says horses are most likely of any animals within our knowledge to have chronic diseases, notably glanders.

In explaining his "antidiptherine," which he applies locally to the parts affected, he says: "It is well known to bacteriologists that germs secrete or evolve a poison which is self-destructive to them, that is, they die from the poison which they themselves generate. He says long before the pabulum upon which they feed is consumed this self-destruction has occurred. Now, he argues, if the poison will destroy the germs in the culture tube, it will also do so when applied to them in the throat. The statistics which he gives are certainly startling, while the plan of treatment seems to be strictly rational. Klebs has volunteered to supply the New York physicians with a large quantity of his "antidiptherine" free of charge, in order to establish his claims.

Next comes Loeffler with his local application, which he claims cured 71 successive cases in which the diagnosis had been confirmed by bacteriological study. The following is his formula:

| | |
|---|---|
| Alcohol, . . . . . | 60 volumes. |
| Toluol, . . . . . | 36 volumes. |
| Lig. Ferri Sesquichlorat, . . . . . | 4 " |
| Menthol, . . . . . | 20 " |

He says the above mixture destroys the germs in five seconds in the laboratory.

Next comes Fanhaut, who claims to have cured 51 successive cases by the use of crude petroleum. All of these cases had been diagnosed by bacteriological study. Regarding the treatment I will say I have used it in nine successive cases, some of which seemed to be very severe, with uniform success, for all of them recovered. I do not think that a sufficient number of cases upon which to form a judgment, especially as the internal treatment usually adopted by me was used in conjunction with the local applications of petroleum. I am able to say, however, that it was the most agreeable application to the patient I have ever tried. I intend to continue its use until I can give an experience derived from a much larger number of cases. At the New York Foundling and the Willard Parker Hospitals very excellent results have been reported by the use of large irrigations of warm salt water. The exudate was removed by this treatment about two days earlier than by the bichloride, and four days sooner than by oxygen peroxide treatment. In 1893, at the former hospital, the death rate was reduced to 13 per cent, while at the Hospital des Invalides, Paris, the death rate under the antitoxine treatment was 26 per cent. In the light of such experiences it seems to me we are not ready to abandon what we already know in the way of treatment for the much vaunted antitoxine. Especially is this true when

it is being attacked in Germany by such men as Virchow, Hansman, and the professor of Pharmacology of the Berlin University (name forgotten). Welsh has also shown that in the culture tube antitoxine does not destroy the germs, but only holds them in abeyance, so that when injected together the disease is not produced; but, he adds, if the cocci happen to coexist with the Klebs-Loeffler bacilli, the disease is not prevented. As this is the more fatal form of diphtheria, it probably explains why antitoxine is not a specific for this dread disease.

Personally I am not ready to abandon well established laws of treatment for the much vaunted antitoxine. I am not ready to subject my patients to the danger of by-diseases, perhaps glanders, from a defunct old horse, until it is shown conclusively that we have indeed found a specific for the most fatal of all maladies. I am hoping, wishing, praying for such a specific, but I am not satisfied that it has been discovered.

In my paper read several years ago before this society I said, "I am much interested in certain experiments which are now being made on the antagonism of different kinds of germs. To me this is one of the most interesting lines of bacteriological thought. Shall we sometime in the future be able to discover what germs are antagonistic to others, and also be able to utilize such knowledge in the cure of disease? Shall we yet be able, when the human citadel is assaulted by and ready to succumb to an army of bacillary invaders, to come to the rescue with another army of friendly microbes?" To some extent this question seems to have been answered, as, for instance, by the destruction of sarcoma by reactions caused by the microbe of erysipelas. That we have found such a solution in antitoxine I am not sure. I look with more hope to "anti-diphtherine" of Klebs, though this process is different from the one I then had in mind.

Dr. Chas. Long.—I wish to commend that part of Dr. Taylor's paper especially which refers to a local board of health. The present mode of carding houses in cases of contagious diseases merely warns us of the danger lurking within, but gives no one the power of enforcing any sanitary regulations. We can recommend isolation, disinfection, etc., but we cannot enforce it. It is the duty of this society to take the initial step in having the council pass an ordinance which will give us a health board, with an intelligent physician at its head, and this physician must have the authority to isolate the patient, to prevent visitors from entering the house, and to disinfect the premises.

For several months now I have been using crude petroleum, as suggested by Dr. Weaver, except that I have merely swabbed the throat dry with absorbent cotton before applying the petroleum instead of douching first with 50 per cent solution of listerine. I have a history of nine cases of diphtheria with eight recoveries and one death. Whether the local treatment with crude petroleum is the cause of the low mortality, or whether it is due to the fact that we have recently been dealing with the

tail end of an epidemic, I am not prepared to say. It is a noteworthy fact to remember that the cases are always milder at the end than they are at the beginning of an epidemic. I have not observed the curling up of the edges of the membrane, as Dr. Weaver has, from the use of petroleum; but in most of my cases there has been very little spread of the membrane after it was once used. That I have been dealing with true diphtheria is proven by the fact that in two of my cases diphtheritic paralysis has resulted, and in at least six of them albumen was present in the urine. It is probably not a good policy to denounce a remedy because one has not used it; so I do not think it would be well to allow the sentiment to go unchallenged that it is the sense of this society that antitoxine is a failure. The reports of Behring, Aaronson, Roux, Fischer, and others who have used it, show a wonderfully small mortality, and these men have only used it in cases where the diagnosis was undoubted, as proven by microscopical examination. With their successful statistics before us, I think we are all justified in trying the remedy, notwithstanding the unfavorable reports of Virchow and Klebs.

DR. CHAS. P. KNAPP.—What anatomy is to the surgeon, physiology should be to the physician, for it is only by an accurate knowledge of the modus operandi of the laboratory of the human body, the technique as it were, that we can ever arrive at a scientific and rational therapy. We are slowly arriving at this wished for condition of therapeutics, we are no longer satisfied with the physiological action of drugs and chemicals, as put forth in our earlier therapeutics, and which consisted chiefly in their effect upon pulse, respiration and temperature.

We have or are getting down to bottom facts, and that is to the ultimate cell. The disease under consideration to-night has, with the other zymotic diseases, contributed largely to bring about this desired result. Vaccination in the treatment of small pox, while a recognized therapeutic fact, has been a pons asinorum to physiologists and therapeutists, but it is in a fair way to be solved now, and what I desire to call your attention to in this discussion to-night is to the modus medendi of the so-called serum therapy, from the point of view of the physiologist. I will add just here that a very potent factor in this advancement of therapeutics is the theory—I might as well say discovery—of the micro-organism causation of zymotic diseases. A thorough knowledge of the life history of micro-organisms is the foundation in part of the new therapeutics, the other factor being the life history and behavior of the body cell. Taking the blood, a type of tissue for the study of the cell, we find it composed of red cells which are divided into microcytes and macrocytes, and occasionally nucleated cells, and the white cells, which are divided into lymphocytes—15–20 per cent.; large mononuclear leucocytes and transitional forms, 6–7 per cent.; the eonrophiles, or leucocytes, with polymorphous nuclei, 60–75 per cent., and eosinophiles, staining with acid dyes, about 5 per cent.—the varying percentage of these elements being

designated by various blood diseases. But it is chiefly to the neutrophiles I desire to call your attention, as a cell type, having power of self-preservation, self-propagation, and alteration to suit outward conditions. It is to its self-preservation power (I am using it as a cell type, because I believe this power is inherent in all cells) with which we are concerned. It is an amoeboid cell, and Karl Rosser pointed out its eating power or phagocytosis, several other observers having demonstrated that it will take in and destroy as many as fifty living anthrax bacilli, and still continue to live and thrive. It has been further demonstrated that an increase in this cellular element of the blood and other tissues is physiological under certain conditions, and these conditions being when a chemical defense is necessary in the body as after a mixed meal, a condition of physiological leucocytosis, and we also know that there is a leucocytosis in certain diseased conditions of the body, as if to defend the body, and while investigations are still pending, it is safe to say that where, in pathological states, leucocytosis in deficient the mortality is very great. There is another fact in this doctrine of vital resistance, or *vis medacatrix naturae*, that when micro-organisms enter the body and destroy cells for a time, how do the other cells ever react and gain the ascendancy and prevent death? Beyers has said that the death of the cell furnishes the key to the whole situation. This death of the cell liberates a constituent or defensive material known under different names, but most generally known as nuclein, and it is this substance that produces vital resistance, natural immunity, and I believe its forced production in the economy by gradual injection of toxines, artificial immunity; and is the basis of serum therapy. Dr. John Aulde, of Philadelphia, has called attention to this fact in the New York *Medical Journal* and *American Therapist*, but very little attention seems to be paid to it. Secular and professional press seems to be under the ban of our older brethren, and ascribe some miraculous power to serum as prepared by Aronson, Behring, Koch and Roux. What is the process? We have a toxine or enzyme prepared from the Klebs-Loeffler bacillus; it is injected into an animal so as gradually to produce a cell death, and a cell defense, by which the blood serum will contain the largest amount of nuclein. The toxine is not by any miraculous power converted into antitoxine; the antitoxine is elaborated in the economy of the animal by the physiologial process of cell defense, a combatting array against bacterial invasion, and the blood serum is the distributing agent to all cells to supply arms and ammunition and place them on their guard. Now, what does this do when injected into our diphtheria patient? It simply raises the vital resistance of the body, and when as early in the disease the defensive power prevails, the patient lives; but when later on, the body already lowered by the enzyme of the Klebs-Loeffler army, the Hessian troop of staphylocci and streptococci come on the system to overwhelm, and the result is death.

I venture the statement, from my observation and reading, that the

hypodermic injection of nuclein prepared from the thyroid gland, if used as carefully as the Heilserum, will give as good results. From cases already collected, the results are as good, and the manner of action apparently identical. Dr. Faulds here can cite you cases. The production of an artificial lucocytosis in the human body, and the raising of the vital resistence of the body, is the modus operandi of cold baths in typhoid fever; of nitrogenized and fatty foods; and change of climate in tuberculosis, all of which produce an artificial (or raise) leucocytosis; of opening the abdomen and washing out the peritoneum with normal salt solution in tubercular peritonitis; of subcutaneous and intra peritoneal injections of water in cholera.

The modern treatment of diphtheria must be, or we do not do our patients justice, the sustaining of the patient by a carefully prepared nitrogenized and carbonated diet, which stimulates lucocytosis, by a careful toilet of the throat with normal salt solution, Dobell's solution or alkaline peroxide of hydrogen, and the hypodermic use of nuclein, or blood serum, with the former made after Aulde formula by Leedom. There are no after effects with the latter; be careful of your product. Bacteriological examination of the exudate should be made early in all cases. It contributes to the proper quarantine of the disease, and often relieves in pseudo cases of a great deal of anxiety.

What I want especially to call your attention to in these remarks is that neither the Klebs-Loeffler bacillus, nor its toxine, produces an antitoxine *per se;* that the material used to produce antitoxine is a toxine when injected into the animal; that the antitoxine is produced in the animal body by the stimulation of a physiological process in the body, known as the defensive action of the animal cell; that this material is a proteid; that it is normally elaborated by the cells, especially the multinucleated white blood cells; that it is set free in the economy by cell death; that its presence in the economy stimulates its production in other cells; that the toxine injected into the amimal produces in this manner the antitoxine in the blood serum of the animal, or the defensive proteid of the cell, which, injected into the patient, not only is thus present in larger quantities, but stimulates its further production by the cell. This is the role of serum therapy in diphtheria. Certain remedies of use in diphtheria also stimulate this production, viz., calomel, bichloride, sulphide of calcium, and it is thus they aid in the recovery of the patient.

The defensive proteid of the cell has been isolated by various experimenters, under various names, the most common of which is nuclein. (See the monographs of Vaughn and Aulde.) The nuclein from the thyroid gland acts, from the cases reported, in a similar manner to the Heilserum, and at the same time is a safer remedy, having no chance of containing the toxine of the bacillus of diphtheria, which is active in very small quantities. (See Welsh's article.) It should be given a trial.

DR. HOWELL.—I have always thought there should be a fixed time for

allowing children to return to school after having diphtheria or any contagious disease in the family. A case in point: I was attending a family in November, 1894, who had three children sick with diphtheria. Three weeks after their recovery, the house having been thoroughly disinfected, I allowed the older girl, who had not had the disease, to return to school. She had not been back in school more than three or four days when she developed a severe case of diphtheria, and one of the chidren who had been sick was stricken with membranous croup and died.

DR. W. H. FAULDS.—I agree with Dr. Weaver in what he has said regarding the diagnosis of diphtheria. It may be difficult at a first visit to distinguish a case of exudative tonsilitis from a commencing diphtheria, but as a rule, on the second or third day after the membrane has commenced to form, the diagnosis is easy.

Regarding the contagion of diphtheria, twenty years ago no precautions were taken either by the family or physician to prevent the spread of the disease. I can recall cases in which diphtheria attacked successively all the children of a family, but do not remember a single instance in which the disease was carried to others, either by other physicians or myself. However, of late years, while I do not wear a linen duster, I am careful while attending diphtheria patients to prevent my clothing from being soiled by the excretions from the mouth or nose.

Dr. Guthrie reports success in eleven cases of diphtheria by the use of the chlorate of potassium and iron. Surely history repeats itself. Eighteen years ago this was the vaunted remedy. But our success in the treatment of this disease at that time was no better than it is now, and so far as my own experience goes, not so good. It was then as it is now, the milder cases recovered and the malignant ones died. With the use of disinfectants, gargles and washes, along with the bichloride of mercury and iron, in small doses, repeated every hour, I believe a larger percentage of the cases, bordering on malignancy, recover than did when chlorate of potassium and iron, in large doses, was our chief reliance.

Dr. Knapp has given us, as I believe, a rational basis for the administration of remedies in this disease.

Observation has taught us that there is something in the animal economy that resists the action of poisons introduced into the system. And in the light of our present knowledge it is reasonable to assume that this resisting force is nuclein, produced by cell structure, and increased under cell stimulation. Assuming the correctness of this hypothesis, rational therapeutics suggest the introduction into the blood of animal nuclein. Acting upon this principle, as evolved by the advocates of cellular therapy, I have used nuclein, in conjunction with other remedies, in three cases of diphtheria, and I believe with excellent results. The way the membrane disappeared under its use, that is by disintegration, or melting away as it were, leaving a comparatively healthy mucous membrane beneath, is, I believe, peculiar to the use of this remedy. I

prefer, however, to reserve my opinion of the therapeutic value of nuclein until my limited experience with it has been confirmed or not, by a more extended use of the remedy. In one of the cases treated with nuclein, a microscopical examination was made by Dr. Knapp, and the Klebs-Loeffler bacillus found.

DR. TAYLOR, in closing the discussion, said: Osler and other authorities claim it is impossible to diagnose between diphtheria and other pseudo-diphtheritic processes unless a microscopical examination of the membrane is made. I fail to see any benefit derived from giving calomel in large doses, as calomel is only absorbed in small quantities in the alimentary tract. Therefore, the same effect would be obtained by small doses oft repeated. Dr. Knapp had mentioned in his paper that potassium chlorate, taken internally, stimulated the leucocytes in resisting poisons taken into the system. I fail to see how it could, and it is in opposition to the teaching of modern therapeutists, as chlorate of potassium is taken into the system as chlorate of potassium, and escapes unchanged in the secretions, and it does not give up its oxygen as was once supposed.

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## TONSILITIS.

READ BEFORE THE SOCIETY FEBRUARY 20, 1895,
BY DR. NATHANIEL ROSS, WILKES-BARRE, PA.

*Mr. President and members of the Medical Society:*

It is with some timidity I come before you this evening to read a paper on the subject, tonsilitis, for I am unable to advance anything new, but if I can provoke a discussion on the subject or recall to your minds any forgotten points, I will consider my effort not a total failure.

Tonsilitis, or quinsy, is an acute inflammation of the tonsils, which may be either deep-seated (parenchymatous) or superficial (erythematous); sometimes the crypts of the tonsils bear the brunt of the inflammation when we have follicular tonsilitis. It is a common disease in young people, occurring most frequently between the ages of twelve and thirty years, and presenting itself very rarely after the fiftieth year.

The causes are, as you all know, predisposing and exciting.

Predisposing causes are previous attacks, age, hypertrophy of the tonsils, rheumatism and scrofulous diatheses, and a general low state of health. Exciting causes are: exposure to cold and damp, traumatisms (such as caustic acids), impacted bodies, external injuries, and, according to Dr. Rice, of New York, septic germs. Dr. Rice says that all kinds of tonsilar inflammations are due to septic causes, in other words, to specific germs, and that those causing follicular disease, parenchymatous disease, and peritonsilar abcess are different from one another. He also says that the tonsils, like other lymphoid tissues, are blood elaborating glands; that when they are in normal condition they probably perform a second function by reason of the large number of leucocytes contained in them, and this function, if not aggressive, at least possesses the power to prevent the entrance of pathogenic germs, through the crypts of the tonsils; that when the tonsils have ceased to perform their function by reason of such pathological condition as interstitial thickening and occulsion of the lacunæ of the glands, they probably present open-mouth viaducts through which pathogenic germs may pass to the lympathic circulation. It is believed, therefore, the septic influences are the exciting cause of tonsilar inflammations, and that the presence of pathological tonsils—tonsils unable to perform their physiological function—is the chief predisposing cause.

Dr. J. Richard Parke, in an article entitled "An Inquiry into the Relationship of Amygdalitis to the Cerebro-Spinal System," expresses surprise that attention has not been directed more specifically to the question of idiopathic neurotic influences in the etiology of acute tonsilitis. He calls attention to the fact that tonsilitis is most common in young and strumous subjects, and that while the same exposure in one individual will invariably produce tonsilitis, in another it will always produce simple pharyngitis. He also says it may be due to sudden mental or physical shock. He reminds us that severe mental impressions are potent in inaugurating pathological processes in certain organs, and that an instinctive reflex act may override even the strongest efforts of volition, and quotes: "As the existence and locality of the ano-spinal and vesico-spinal cen-

tres have long ago been demonstrated," it is not improbable that adeno-spinal centres also exist, any strong mental emotion acting upon which might readily effect the circular tonsilaris, as it is well known to effect the vesical sphincters, and produce amygdalitis without exposure, and explains the morbid anatomy by saying that at first there is a sudden occlusion of the follicles induced by a mental impulse transmitted to the motor nerves, with consequent retention, and, at the same time, stimulation of secretion, which would account for the sudden onset of quinsy. Dr. Parke's theory accounts for the cause, I think, of at least one case occurring in my practice, and circumstances are about as follows: In the summer of '93 I was attending a child, a first born, for attacks of colic, when one night I was called from bed to come and see if I could do something for the child, as it was dying. I went and found the child suffering from a more severe attack of colic than usual, and found the mother of the child very much excited and greatly frightened; the next morning when I called to see the child I found the mother suffering from a severe attack of tonsilitis; she having no previous attack, no history of exposure, and so far no subsequent attack. As regards Dr. Rice's theory of specific germs, as the cause of tonsilitis, although, as far as I am aware, there has been no specific germ demonstrated, yet I think we should give the theory more than a passing thought, especially when we see the disease, in some instances, passing through a whole family. Dr. Beverly Robinson says, in regard to the germ theory: "The resemblance between the symptoms of tonsilitis, especially follicular, and those of other diseases whose pathogenic micro-organism is known, leads me to conclude, from analogy, that a more or less similar germ is present here also." Dr. Hemenway has frequently found embedded in the tonsil crypts masses of epithelium containing leptothrix, other bacteria and leucocytes, which, when removed by an antiseptic spray, has prevented the recurring attacks in individuals.

In regard to the diagnosis between tonsilitis and diphtheria, I feel that I am unable to give any suggestions whereby you will be able, in the first twenty-four or thirty-six hours to dif-

ferentiate between the two, and after that all of you who have followed up the literature on diphtheria, for the last two years, will be able, for yourselves, to differentiate between them. In regard to treatment of tonsilitis, the writers, holding different views of the etiology, have their different modes of treatment. Dr. Parke, following up his theory of the connection between the cerebo-spinal centre and tonsilitis, uses remedies to depress the motorial function of the spinal cord, *e. g.* aconite, verratrum or pulsitilla; locally as solvents, he uses papaine, sodi bicarb. or lactic acid. And those holding the germ theory in tonsilitis, use antiseptic as sprays, or applications and alteratives. Those holding entirely to the rheumatic origin use guaiacum in some form with such adjuncts as cold compresses, calomel and the salicylates, deep injections of carbolic acid or cocaine injections. In regard to cocaine, it would be well for us, in these days of Bright's disease, first to know our patients, or we may have the existence of Bright's disease brought before us in a startling manner; for instance, in the winter of '91 and '92, at a clinic in the J. M. C. Hospital, a man was to be operated on for a epithelioma of the lip, the operator using cocaine as a local anesthetic, when, after an injection of a few minims of a 5% sol., the patient became violently delirious and maniacal. Dr. J. C. DaCosta, who was present, called attention to six previous cases which had acted similar to the above; all of them were found to be suffering with chronic albuminuria; the operator acting upon the suggestion, had the urine of the man examined and found it to contain quite an amount of albumen.

In the fall of '93 a local physician was attending a man who had vomiting and nausea; he gave him a small dose of cocaine to quiet his stomach, and in a few minutes the patient went into convulsions. Reciting the occurrence to me the next day, remembering the case quoted above, I asked him to examine the urine; he did so and found about half the volume albumen; three months later he died of uraemic coma. Pardon the digression in reference to cocaine, but I hope we will profit from the references to the cases cited above.

In regard to other remedies. Hare speaks very highly of

aconite and guiac in frequent doses. Quinine is also used; also the salicylates, benzoate of sodium, and one of our local physicians gets good results from $\frac{1}{100}$ gr. doses of biniodide of mercury; another just as good results from resorcin, which I think holds out Dr. Rice's theory of specific germs. Guaiacol is one of the newest remedies for tonsilitis. Dr. Corwin of Chicago reports fifteen cases treated successfully with applications of pure guaiacol, and states that in every instance amelioration followed the first application. Where suppuration is threatened, hot applications, such as poultices, vapors of boiling water or lime water, to which some medicament has been added, such as benzoin, paregoric, chamomile, sage or hops. Dr. Norbury has found sulphide of calcium to relieve the suppurating condition of inflamed tonsils, he also says in acute cases suppuration has been prevented; the febrile symptoms pain, etc., have been greatly modified by one-eighth to one-half grain dose frequently repeated.

In my own practice I always have the bowels thoroughly moved by broken doses of calomel, or one or two five grain doses, then I give guaiac, the ammoniated tincture, or most frequently a prescription something like this:

℞ Guaiac, Pulv., grs., V.
Potassii Chloratis, grs., ℸ ss.
Sodii Benzoat, grs., ℸ
Mucilag. Acaciae.
Aquae, āā Ad. oz., ℸ
Sig., every 2 hours.

And where I suspect rheumatic influences I combine F. E. phytolacca, in five drop doses, for the headache and other severe pains accompanying. I give phenacaetin, also prescribe a nourishing liquid diet; locally I use hydrogen peroxide and listerine, equal parts, as a gargle, and so far I never had a case to suppurate.

## DISCUSSION.

DR. BUCKMAN.—At our last meeting I was rather "sat down upon" for presuming to say that it is not always possible to make an early diag-

nosis between tonsilitis and diphtheria, and I was accused of grave error in supposing that, because a case of sore throat in which there is exudation upon the tonsils gets well in three days, it is not diphtheria. I did not intend to make such a statement; nevertheless, I do not believe that any physician every treated a case of genuine diphtheria that recovered in three days without any sequelae. I believe, too, that of all the so-called cases of diphtheria that are treated in this city, not more than 75 per cent. are true diphtheria.

But I have with me better argument than my own belief. In an article in the *Medical News* of February 2, Wm. Bissell, M. D., Bacteriologist of the Department of Health of Buffalo, N. Y., on bacteriologic examination in the diagnosis of diphtheria, says: "It is generally admitted by all clinicians of experience that it is often impossible to make an accurate diagnosis of diphtheria, either from the clinical history, the anatomic lesion, or from both. There are no constant differences that separate the simple non-contagious forms of inflammation from the diphtheric type, and it is a very small proportion of cases that an early and reliable diagnosis can be reached from any data obtainable. This was conclusively demonstrated in the examination of cases of suspected diphtheria at the Willard Parker Hospital in New York, where the diagnosis was made by department diagnosticians and confirmed by the best medical talent. Subsequent bacteriologic examination in these cases revealed that from 30 to 50 per cent were not diphtheria, but maladies of non-infectious character. Appreciate sending a case of follicular tonsilitis to a hospital and having it placed in a ward with diphtheria patients!"

Dr. Weaver.—Is there a positive differential diagnosis between diphtheria and tonsilitis? Usually the difference is well marked. In the former disease the color is an ashen gray, while in tonsilitis it is a creamy gray. In tonsilitis the exudate can be rubbed off, leaving a surface unbroken, while if force enough be used to remove the exudate in diphtheria, a bleeding and ragged surface results. The location of the exudate usually differs. In diphtheria the exudate usually extends to the palate, uvula, and pharynx.

The walking cases of diphtheria are the most dangerous ones, as they spread the disease. In these very mild cases the exudate may be confined to the tonsils. These cases get well, broadly spreaking, in two or three days.

Of course, in all cases of true diphtheria there follow certain sequelae, as albuminuria and paralysis, but these sequelae may be so slight as to be overlooked. Dr. Buckman, in the quotation read, speaks of non-infectious diseases of the throat, and seems to class tonsilitis among them. I am sure, from clinical experience, that tonsilitis is an infectious disease. I have often and often seen the disease spread through a whole family. I am a strong believer in the microbic theory of the production of tonsilitis.

DR. KNAPP.—Dr. Osler says that tonsilitis is rare in infants. My observation is otherwise, as I see and treat many nurslings yearly. I believe this statement is made because we do not examine infants carefully—the tonsils do not present the appearance of older children or adults; the follicles are not often filled with cheesy matter, but present a herpetic eruptive appearance. The "insufficient liver" predisposes, and I believe the rheumatic tonsil has its origin in this and the uric acid predisposes. F. J. Shepard has called attention to the frequency of tonsilitis in the newly married, a relation thought to exist between the testes and ovaries and tonsils. I have observed it as a very frequent disease in masturbators and in those who indulge in excessive venery, but I believe that the real explanation is that the lowered tone of the system predisposes to the attack, which I believe to be local and due to the invasion of the streptococcus and staphyloccus from the air. Spring and fall find these micro-organisms most numerous in the air and water, and it is these seasons that give us the largest percentage of tonsilitis.

Great care must be used in the diagnosis. Osler says the inflammation, fever and swelling gradually subside, and within a week the fever departs and the general symptoms improve. My experience leads me to believe that cases that do not yield and are not practically well in seventy-two hours have a very suspicious aspect, and that a more or less attenuated form of the Loeffler bacillus is present. This class of cases yield this bacillus when cultures are made, and explain many cases of diphtheritic contagion not thought of before. I also believe the slight so-called febrile albuminuria of Brown can be explained in tonsilitis in this way. In a long series of febrile cases in other diseases I have failed to find albuminuria. The apex systolic murmur of the heart in children in fever is often found in tonsilitis, and should not mislead us as to diagnosis of well marked cases of tonsilitis from diphtheria.

As to treatment, my plan is very simple. Phenacetin and salol in small doses during the febrile stages, with or without calomel, as cases indicate. This is a pleasant powder and is given on the tongue every two hours. In the past six months I have been interested in nuclein from the thyroid gland, and have used it in ½m tablets of Ludom. The series of cases so far collected have yielded to this in seventy-two hours. It also has this advantage, if the diagnosis is mistaken, nuclein (which, I believe, is equal to if not superior to so-called antitoxine in diphtheria) has been used early enough to greatly benefit your case if it should be diphtheria. The chronic form or adenoid growths of pharynx and naso-pharynx are of great importance, and when recognized should be treated carefully and early by the physician, or, perhaps better, the specialist, as very many mental and bodily defects can be prevented in this way.

DR. DOOLITTLE.—I fully agree with Dr. Knapp that acute tonsilitis is of very frequent occurrence in infancy. I do not think Dr. Ross, in his essay, gave sufficient prominence to the rheumatic diathesis as a pre-

disposing cause of tonsilitis. I have often observed patients who could foretell an attack of acute rheumatism by one or two days by having an acute attack of tonsilitis before each attack of rheumatism. So far as the treatment is concerned, I am not able to find any remedy which has any power to cure or shorten the course of an attack of tonsilitis, except in rheumatic cases, and I have been accustomed to treat the patient rather than the disease.

DR. FELL.—I do not believe in the three day limit as stated by some for the cure of tonsilitis. I at one time was very confident of my ability to cure a case very promptly, and being subject to the trouble, I had numerous times treated myself; but one year ago I had an attack which lasted a week in spite of my own and others' treatment. We were confident that it was not diphtheria, but genuine follicular tonsilitis, and I do not consider a time limit of a few days a safe guide to differentiate between diphtheria and tonsilitis.

DR. LEWIS H. TAYLOR.—I formerly thought there should be no difficulty in diagnosing diphtheria, but I am now convinced that it is sometimes difficult in the first day or two to distinguish between a severe case of tonsilitis and a mild form of diphtheria. I attended a patient last summer with what I regarded as tonsilitis. On the second day the tonsils were covered with membrane, the throat much swollen. I feared I was about to have a case of diphtheria on my hands, but by the third day the exudation was fading away, and by the fourth day had entirely disappeared.

In the treatment of tonsilitis we have, as Dr. Ross has told us, a variety of remedies at our command, all of which are valuable; at least the patients readily recover. I have for a number of years past been in the habit of giving in cases of follicular tonsilitis, a mixture of tinct. of phytolacca, tinct. of aconite, tinct. of belladonna, from my medical case. This is mixed in water, and is not unpleasant to take; it is certainly soothing to the throat. I have frequently applied locally a 2 per cent. solution of nitrate of silver, and sometimes stronger, to the exudation, and I believe, if used early, it is of decided advantage. I agree with Dr. Doolittle that it matters but little what remedy we use; ordinary cases of follicular tonsilitis will recover in about three days with any treatment.

DR. MEBANE, a visitor.—I wish to call attention to the local application of pure guaiacol. I used it once and succeeded in aborting a case which twice in the same patient had gone on to suppuration when guaiacol had not been used. I saw an article in the New York *Medical Record* recommending this remedy, and I am inclined to believe it a good one.

# HOW SHALL A SURGEON CLEANSE HIS HANDS?

BY DR. MARIS GIBSON, OF WILKES-BARRE, PA.

READ MARCH 6, 1895.

After spending nearly all the time at my disposal on a paper that I intended to present to you at this time, I found that I could not possibly complete it, so almost at the last minute I have gathered up some thoughts on the present subject.

What I have are mostly the practice of prominent writers. When I ask, "How shall a surgeon cleanse his hands?" I mean a surgeon, but more especially an obstetric surgeon, because my own practice is more of that character; and I wish to bring out the thought that every obstetric case is in many respects a surgical case, for even those that are the nearest to being physiological purely, and the farthest removed from operative work, have some surgical needs. In all of these cases there are some breaks and abrasions in the lining of the tissues, and there is every reason why they should be made and kept as aseptic as possible; while the major operations are as much surgical as any surgical work, and need the same care every way.

Obstetric antisepsis was first introduced by Semmelweiss in 1847. While his work was a wonderful advance on what preceded it, the subject has grown much since that time, and the present generation of surgeons have much more of that cleanliness that is said to be "next to Godliness" in their practice than those who lived in the earlier years. A few years ago we talked about antiseptic surgery. Now we have more to say about aseptic surgery. As one has said, "We aim to make the patient antiseptic before the operation and keep him aseptic during and after it." One of the worst and most fatal things that the obstetric surgeon has to contend against is the midwife and her old syringe, and we may well hail the day when these will, along with the old grease cup, be banished from the "lying in" chamber.

I will now arrange in order notes of how other people wash

their hands, so that we may learn how to cleanse ours. Garrigues' directions are: "At the beginning of each labor, doctors and nurses wash their hands with soap and water, using stiff nail brushes, and after that in the solution of mercuric bichloride 1 to 1000." If more than one patient was in labor at the same time, the same precautions were taken before going from one to another. Besides this the hands were held for a moment in the warm bichloride solution, kept at the bedside, every time before the genitals were touched.

E. P. Davis says: "Scrub the hands thoroughly with soap and water, then rinse them, then scrub in the merc. bichloride solution 1 to 1000." Playfair gives the same directions, also Bar. Lusk about the same. Barnes gives no special directions, though giving very full antiseptie directions in treating puerperal fever. His book, "The System of Obstetrics," published ten years ago, is just in the transition stage in regard to septicaemia and asepsis.

Munde: "Before examining a patient the hands and nails should be thoroughly cleansed by scrubbing with soap and water and the use of some disinfecting solution. A physician should not go from a septic case or a necropsy to a confinement case till the garments were scrupulously cleaned, and a warm bath taken, particularly as to the hair and beard. A physician whose fingers and nails are habitually in mourning should give up the practice of obstetrics."

My own practice has been, after attending a septic case, before taking another to absolutely change every article of clothing and practice most thorough bathing. The following directions, taken from Grandin and Jarmano's "Obstetric Surgery," will end this disjointed talk. "In the lying-in room the physician should remove his coat and roll up his shirt sleeves above the elbow since, aside from instruments, the hands are the most likely to septicize the woman, from direct contact; great care must be exercised to render them aseptic. If the physician has lately been in contact with any infectious material, thorough washing in soap and water and scrubbing in the bichloride solution will not suffice to render these hands aseptic. Under such conditions the following method must be

resorted to: The hands and arms are scrubbed for at least ten minutes in hot soap and water, the latter being frequently changed. Especial attention must be paid to the finger nails, under which the infectious elements are most prone to lodge. The hands and arms are next covered with a hot saturated solution of permanganate of potash, and are then immersed in a hot saturated solution of oxalic acid until the stain of the permanganate has entirely disappeared. The oxalic acid is next removed by soaking the hands in hot sterilized water. They are then bathed in the merc. bichloride solution. Under ordinary conditions, when the physician is sure of his freedom from infectious material, this elaborate process is not necessary. It will suffice to scrub the hands in hot water and soap, and immerse them in the 1 to 1000 solution of the merc. bichloride. They are then bathed in alcohol.

## DISCUSSION.

DR. STEWART.—The subject of hand disinfection, as presented by the essayist to-night, is one of great importance to the surgeon as well as the obstetrician. While there are probably as many methods of sterilizing the hands as there are operators, they all agree upon the first principle, that is, thoroughly scrubbing the hands with soap and hot water and the use of a good stiff nail brush, with especial attention to the nails; and I believe, in a great many cases, this would be sufficient for all purposes. The method I pursue, in all my abdominal work, is the same as used by Dr. Howard Kelly. First thoroughly scrub the hands for ten or fifteen minutes with green soap and hot water and a good nail brush; then immerse the hands in a saturated solution of permanganate of potash until every part of the hands and lower forearms is stained a deep mahogany red. They are then transferred at once to a saturated solution of exalic acid until completely decolorized, and from this solution to one of bichloride 1-1000, and then wash again in sterilized water. This method will render the hands about as near aseptic as it is possible to make them. There are very few surgeons but what know how to render the hands thoroughly aseptic, but there are a great many that do not know, or I might say, practice keeping the hands aseptic after they have gone to all the trouble of sterilizing them.* I frequently watch operators who do not hesitate to adjust their glasses, scratch their ear or head, and then go on with their work not realizing for a moment they have undone what they have spent probably a half hour or more to accomplish, and then wonder why it is the wound becomes septic. This is the only important point I

wish to impress upon you: once you have sterilized the hands keep them so throughout the operation.

DR. GUTHRIE.—I agree with the opinion expressed by the essayist that thorough scrubbing with soap and water is the most important step in cleansing the hands, though not all-important. Were we sure that our hands were not contaminated by any specific germ of disease, such as erysipelas, diphtheria or scarlet fever, or from having opened an abscess, or attended a case of septic character, it might be safe and advisable to depend upon scrubbing and washing. I think the care of the hands is important, especially of the nails. Every man who practices surgery or obstetrics should be, himself, a manicure and pay especial attention to his nails. The nails should be evenly trimmed and not scraped with a knife either on the under side or on the top, for these scratches offer great ruts or hollows in which germs may hide. Then the cuticle at the border of the nails should be pressed back so as to avoid hang-nails. The nails can be cleansed underneath either with another finger nail or a horn instrument accompanying manicure sets, or with a soft match or tooth pick. Then any solution that causes cracking or excoriating the skin is bad; carbolic acid is notably bad. In our practice in the hospital, where an operation involves the opening of the peritoneal cavity, or a joint, it is deemed necessary to use the several steps as advocated by Dr. Kelly—namely, scrubbing, staining with the permanganate solution, bleaching with the oxalic solution, and rinsing with bi-chloride, and finally with sterilized water. In other operations, such as amputations, plastic operations and the like, it is deemed sufficient to scrub thoroughly and immerse in a solution of corrosive sublimate, 1-1000. One thing is important, namely, that in scrubbing, the brush should be clean; it should be sterilized before using.

DR. FELL.—I want to take in consideration the use of alcohol in cleansing the arm as an addition to the permanganate method, as it is applied in the bi-chloride method. After washing the hands and arms thoroughly with soap and water, I believe it is advisable, in both methods, to use alcohol or an etherial solution to dissolve the secretion of the cutaneous glands so that the permanganate solution can more readily enter these ducts, etc., and destroy these small organisms, and then to follow in the usual manner. I am of the opinion that in all cases of operation we should have short sleeves on the arm coming down nearly to the elbow, and completely covering that part of the garment which we have worn, because, where this is neglected, we constantly see sleeves stained with blood, and at times, sponges, instruments, etc., used in the operation often come in contact with these parts.

Dr. Taylor asked Dr. Gibson if he followed the course recommended by him in every obstetric case that he attended?

DR GIBSON.—I am free to say that I do not, though I think that some

such plan should be followed. I regard every obstetrical case as a surgical operation, which it is, more or less, and the directions given by the later obstetric writers are just as explicit as in surgical cases.

DR. ROE.—I have felt the importance of thorough asepsis in obstetrical practice. Have always observed careful washing and the use of bichloride, but during part of the year had several cases of mild sepsis following labor. Have therefore been led to add to my obstetrical armamentarium a good nail brush, and before proceeding to make examination in obstetrical cases give hands and forearm a thorough scrubbing, followed by immersion in bi-chloride solution. Since adopting this plan have seen no septic trouble. Have used Dudley's Glycerine Emollient as a lubricant with satisfaction.

DR. HOWELL.—I think we are often a little careless in regard to the lubricants which we use on our obstetric forceps. It is customary, often times, for the obstetrician to use lard and sometimes vaseline. Unless we have a freshly prepared bottle of vaseline every time we are liable to convey germs to the patients. Since this matter is under discussion, it seems to me there might be a suitable lubricant prepared in sterilized tubes as suggested in the quotation read by Dr. Gibson.

DR. STEWART replied that he did not use lard or vaseline at all on obstetric forceps, but preferred using soap as a lubricant.

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## A CHAIN OF DIPHTHERIA CASES.

READ BEFORE THE LUZERNE COUNTY MEDICAL SOCIETY, MARCH 28, 1895,
BY DR. DELBERT BARNEY, OF WILKES-BARRE, PA.

I shall attempt this evening to give a plain story of contagion, with no more words than is really necessary, to show the connection of one case to another, thus making the recital as brief as possible, and yet avoid the tediousness of a mere catalogue. The matter of treatment does not concern the present subject, therefore it will not be touched upon to any great extent. The lessons which may be deduced from this story are obvious, and are thoroughly in keeping with the teaching of the profession, and they have been dwelt upon many times by different members of this society. The following is the story:

On the 21st of July of last year I was called to see Roy G., a boy of 13 years, living in the lower end of South Wilkes-

Barre. His mother said he had a bad sore throat. I found the lad in bed, though much against his will, for he did not consider himself sick. His tonsils were very much swollen, and speaking and swallowing were very difficult. Aside from this he was comfortable. His throat had been sore several days, but as he was subject to swollen tonsils his parents were not alarmed until they saw a membrane forming in his throat. I was inclined to call the trouble quinsy on my first visit, but concluded to wait until I was sure, in the meantime keeping the boy isolated from the rest of the children, of whom there were five, and directing him to spray his throat frequently with oxygen peroxide, and to take internally a mixture containing Tr. Ferri Chlor.

The matter of isolation was very easy, for the boy's room was on the second floor, while all the rest of the children slept down stairs, and the weather was so warm and dry that they spent the whole day out of the house.

My subsequent visits satisfied me that the disease was diphtheria, but the mildness of its course, and the ready disposition it showed to yield to treatment, made me waver somewhat. The throat, however, became thoroughly covered with the membrane, which was thick and abundant. Still there were no other distressing symptoms, and in less than a week from the time that I first saw the case, the membrane began to disappear, and in a few days more it was gone entirely, leaving the throat very red and the tonsils enlarged.

In the meantime none of the other children were taken with the disease, although some of them complained of a slight sore throat, but there was not the smallest trace of membrane to be seen in any of their throats. Upon inquiring as to whether there had been any other cases of diphtheria in that neighborhood, or whether the boy had been exposed somewhere, I found that there had been a similar case in the next house on that street. Johnson M., a boy somewhat older than my patient, had a throat which looked even worse than Roy's, and the youngsters were constant companions. In fact, they roamed the woods and fields together and even went over to the Three Cornered Pond, a distance of about ten miles, walking the greater

part of the distance there and back the same day. Johnson had been working in the breaker, but just at this time there was no work. Although his throat was very bad he received no treatment whatever, nor did he stay in the house at all. When the breaker started up again he went back to work, and yet he suffered no inconvenience. If he had diphtheria, and it seems conclusive that he did, he probably contracted it while at work in the breaker, and his case was the first of the series with which we are dealing to-night.

About the first week in August, Roy G. and his eight year old brother went to Scranton to visit their aunt, Mrs. R. Roy had been apparently well now for about three weeks, but up to this time the boys had not slept together. Now, however, they w ereobliged to share the same bed. In about three or four days the little fellow complained of sore throat, and soon a distinct membrane appeared there. Mrs. R. had never seen a case of diphtheria, and thinking it a simple sore throat, she was not at all alarmed, but set to work at once to treat it herself with gargles and washes. She kept him in bed, but did not take any pains to keep the other children away from him. His case proved to be very mild, and in a week the boy was all right again, and as soon as he was strong enough she sent the children home.

Mrs. R. had three children of her own, Jessie, aged 8, Esther, 5, and Arthur, 15 months. A few days after her cousins had gone home Jessie was taken sick precisely as the little boy had been. Her mother, elated with her previous success, and still ignorant of the character of the disease with which she was dealing, again set herself to fight it in her own way. Again she was apparently successful, for the membrane yielded and finally disappeared. But the child did not improve any further; on the contrary, a hoarse croupy cough set in, and gradually grew worse. Now the mother was thoroughly alarmed and sent for Dr. Gardiner, her family doctor. The doctor diagnosed the case as one of membranous croup, and told the parents that no time was to be lost in putting a tube in the child's throat. They, of course, consented, and at nine o'clock

that evening, Dr. Roos, who had been called by Dr. Gardiner, assisted by the latter and myself, performed intubation.

The relief to the child was instantaneous and constant, though the tube was coughed out and had to be replaced about midnight. For three or four days the tube was left in place, and after its removal the child's recovery progressed constantly though slowly. The vocal cords were paralyzed and the patient very much emaciated.

In performing the operation of intubation, Dr. Roos was careful to remove his coat and vest, and to protect himself as much as possible by throwing a sheet over his arms and shoulders. Of course his left index finger had to be inserted into the child's mouth in order to guide the tube into place. Perhaps he did not use as much care afterwards in washing his hands, but at any rate, his twenty months old baby was soon after taken sick with diphtheria. Having the advantage of its father's constant care from the beginning, it made a good recovery, though at one time it was thought that intubation would be needed.

When Jessie was considered out of danger, and her voice was gradually improving, her little brother, Arthur, was taken suddenly with the disease, which, almost from the beginning, assumed the laryngeal type. Although he had the best of care, and intubation performed, in four days he was dead.

As soon as it was discovered that this child had diphtheria the other two children were sent away from home in order to save them if possible, the one from infection, the other from reinfection. Little Esther was sent to Binghamton to stay with some friends. But she was removed too late. When the parents returned from burying Arthur, they found Esther had been brought back with her throat filling up with membrane, and on the eighth day from that time she too was buried.

The parents were next attacked, but fortunately both were very mild cases. While the membrane was very distinct and typical it was not very abundant, and they soon recovered.

The R. family lived in a double house, just off Pine street, in a court running parallel with Adams avenue. The family living in the other part of the house had two children, Will and

Grace, aged respectively 12 and 8. Grace was seen talking with Jessie on the front porch, about the first day the latter was allowed to go out, and before she could yet speak aloud. This was before the other two children of the R. family were sick. In due time both Grace and Will had diphtheria. Both recovered. Two other cases of diphtheria are thought to have been derived from the same source, but I cannot trace them directly. They were in a family on Adams avenue, less than half a block from the R.'s. One child died, the other recovered.

The scene of action is now transferred to Stultzville, in the heart of the farming region, ten or twelve miles out of Scranton. Jessie R. had been sent there to the house of an aunt the same time that Esther had been sent to Binghamton. She had been there only a short time when the aunt, who had visited the children in Scranton before the disease was known, was obliged to go to bed with the same trouble. Her attack was quite severe, but lasted only about ten days, and she made a good recovery.

Jessie was at once sent back to Scranton to Dr. Gardiner's private hospital, where she remained until all danger of infection in her home was removed. But her cousin Frank, in Stultzville, was the next victim. He probably contracted the disease from his mother. After a severe fight, the doctor and the trained nurse were victorious and the little fellow was saved.

The last link of this chain was an aunt of Frank's, aged about forty. She was deathly afraid of the disease, and staid religiously away from the sick rooms of her many nieces and nephews as long as it was thought there was the least danger. But when Frank was apparently entirely well she went to see him, and in her joy to find him recovered, she kissed him repeatedly. She then went home and took her bed, and went through a severe siege from the terrible enemy.

Here we have a series of sixteen cases of diphtheria traced almost directly from one to another, and exhibiting nearly every phase of this awful protean disease, ranging from the parent case, which was so mild that no treatment was demanded, to three which were so severe that no medical skill could save them.

The disease seemed to center around the R. family, every member of which was stricken, and of whom two died, in spite of the best medical care and a trained nurse. There must have been something wrong with the sanitary condition of that house, rendering it a good culture bed for the poison germs; for the tale is not all told. Notwithstanding the fact that every effort was made to disinfect that house by fumigating, boiling, scrubbing and burning, diphtheria again broke out there during the first week in March, and Jessie, now the only child, was again prostrated. This time she was under the care of Dr. Capwell, formerly of the Lackawanna Hospital, who promptly made use of the antitoxine serum. The membrane had been spreading quite rapidly, but within twenty-four hours after the injection it almost entirely disappeared, and within two days not a particle was left. This case cannot be traced to any other source than the house in which the patient lived.

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## SOME THOUGHTS ON THE ORIGIN AND SPREAD OF CONTAGIOUS DISEASES.

READ BEFORE THE SOCIETY APRIL 3, 1895,

BY DR. W. H. FAULDS, LUZERNE, PA.

Aside from aseptic and antiseptic surgery, there is, perhaps, no subject in which, at present, the laity and medical profession are taking greater interest than the origin and spread of contagious and infectious diseases.

With the advent of antiseptic surgery came the germ theory of disease, and the theory of contagion and infection through micro-organisms, and in this way was developed a force which has revolutionized surgery, and set at naught almost every principle upon which the leaders in sanitary and medical science had for centuries based their teachings and investigations.

That such a radical change in the fundamental principles of these great factors in the world of science should work a cor-

responding change in the means used for the prevention and spread of contagious diseases, goes without saying, and that the laity, physicians and sanitarians should be tardy in adapting themselves to the new order of things, is what might be expected. However, we believe the time has come when we, as physicians, ought to be preparing ourselves to measure up to the standard required by the new regime, and thus escape the censure which is sure to come from a confiding public, if we prove recreant to our trust. But in order that we may be successful, we must first have a clear conception of the principles which are to guide us in our efforts to accomplish the end in view.

A moment's consideration of the subject teaches us that almost all the vital processes are based upon the principle of supply and waste; the waste products serving as food for plant and vegetable life, and these in turn furnishing food for the higher and lower orders of animal life, and that waste material or filth becomes a source of disease only when misappropriated or diverted from its proper channel. In other words, the waste matter of animal life, if not properly appropriated, furnishes a hot-bed for the reproduction of micro-organisms, which are now recognized as the chief factors in the production and spread of contagious diseases.

The land and city refuse, swept into our rivers, furnishes pabulum to the finny tribe, and they in return supply the most delicious meats to the inhabitants of every clime. But not only does the refuse contribute to the maintenance of all animal life, but the lower order of animals are sacrified that those higher in the scale may subsist.

It is also true that this higher order may become the easy prey of the microscopical world, being sometimes swept down upon by an army of these minute invaders, their onslaught being more deadly than that of the best disciplined soldiery armed with the most approved weapons of modern warfare.

But besides being the avowed enemies of the human family, vulture-like, these infinitesimal wonders are ever on the alert, watching for the first symptoms of decay, always ready to assert their prerogative whenever a soil favorable to their de-

velopment and propagation is spread out before them. Unlike the human family, that select the best in the line of animal and vegetable foods for their sustenance, these disease-producing organisms revel only in tissues of low vitality, caused either by temporary departure from health, or the incipient stages of the process of degeneration and decay.

So intimately associated are they with the higher forms of life, that they are found everywhere, even occasionally in healthy tissue. "They exist in the air, the soil, the water, in our clothing, on the surface of our bodies, and on the mucus membrane of the intestines and respiratory tracts." But as we have already intimated, it is chiefly in decaying organic substances that they find a soil most favorable to their propagation and development. It is this special affinity of bacteria for animal tissue that has given origin to all the contagious and infectious diseases. Thus in scarlatina, diphtheria, measles, small pox, typhoid, whooping-cough, and a host of other affections, we find in each its peculiar disease germ, each having distinguishing features as familiar to the bacteriologist as the different types and races of the human family.

The question is sometimes asked, "Where did the first case of contagious disease originate?" One answer to this question is, that until spontaneous generation is proven and life shown to be the result of physical forces, these micro-organisms, capable of reproducing themselves, must rank with the higher orders of organic life, whose origin can only be traced to Him who in the beginning created all things. If the smallest germ of animal or vegetable life may be the product of physical forces, then all life, yours and mine included, may be the result of forces in nature, and we need no longer look to a Supreme Being to solve the mystery of the origin of life.

But assuming that the pathogenic germs had their origin with other forms of organic life, the question as to the origin of contagious diseases still remains unanswered, and the only explanation we have to offer is, that the first case of contagious disease was caused by the presence of virulent bacteria in human tissue of lowered vital resistance, and that the pathogenic bacteria were made such by cultivation in a favorable medium,

furnished by the habits and environments of man at some period in the history of the human race.

That the virulent bacteria were not, in their pristine state, capable of producing small pox, diphtheria, scarlatina, cholera and syphilis seems reasonable from the fact that these diseases are spread only by contagion or infection from a previously existing case, and that these diseases can be clearly traced to the countries in which the primitive germs were first made pathogenic. Again, it would be hardly fair to assume that these countries were exceptions to the rest of the earth's surface in the matter of containing these germs, and that primitive man took up his abode in the only countries fruitful of disease germs, and which have since given as a legacy to his posterity almost every pestilential disease to which human flesh is heir.

To me, then, a logical inference is, that bacteria are present with the other forms of organic life in all parts of the habitable globe, and that all that is required to make them pathogenic is the favorable conditions which developed cholera and other germs in the countries where they first made their appearance.

The argument then is, that the conditions favorable to arousing the microbe to a state of activity must exist before the disease can make its appearance. But the bacteria, once active, act in the presence of conditions that could not arouse the microbe from its dormant state. To illustrate: cholera, so far, has failed to gain a foothold in this country because the conditions here are not such as to arouse the dormant germ. However, the active bacillus from abroad, that has become virulent from repeated multiplication in a favorable soil, produces the disease here in its fatal form among the susceptible, just as it does in older countries. The same, I believe, is true of scarlatina, small pox, measles and diphtheria. Diphtheria was known and described by Galen. Memorable epidemics existed in Rome as early as A. D. 856, but it was not until eight hundred years later that this disease made its appearance in Switzerland and Germany, a century later in Naples, and about the same time in our own country.

So of scarlatina, although known as early as the first century of the Christian era, it was first described by an English phy-

sician in the 16th century, and extended to the western world through European shippings in 1735, to Iceland in 1827, and to Greenland in 1847, showing conclusively that this germ, like diphtheria, was fostered and brought to a state of virulency still unknown to us, by a people who, in a state of ignorance and religious lunacy, looked to their gods for relief, while they themselves were violating every principle of the laws of health. Again, small pox was first mentioned by an Egyptian physician in the sixth century, and undoubtedly this germ owes its extreme vitality to the favorable conditions under which it was aroused into activity, and its virulence developed and increased.

So we might mention other diseases which exist here, but from which we would never have suffered had they not been brought to us from these disease-breeding countries, because the conditions here have so far not been such as to arouse the dormant germ.

This, then, is, in brief, our hypothesis concerning the origin of contagious and infectious diseases, the basis of which is found in Koch's theory, which must now be recognized as the starting point of everything bearing upon this subject.

Prior to the discovery of Koch, there were many theories extant regarding the spread of contagious and infectious diseases, none of which, however, received confirmation in more recent investigations. But now the generally accepted theories are those of this great leader in scientific thought. And as his investigations have shown that all contagious diseases are dependent upon the presence of a micro-organism, capable of self-propagation, the theory that every case of a contagious disease must have had its origin in a previous case, at once became tenable.

This theory, however, was advanced by medical writers prior to the investigation by Koch of the germ theory of disease. Macnamara, in his discussions on cholera, says: "No amount of over-crowding, no special condition of the soil, nor any circumstances with which we are acquainted has ever been known to originate Asiatic cholera *de novo* among men removed from its endemic influences, or unless the disease has been epidemic beyond the confines of India."

Again he says: "Every outbreak of the disease beyond the confines of British India may be traced back to Hindoostan, through a continuous chain of human beings affected with their dejecta."

In 1881, Wilson of Philadelphia says of typhoid fever: "Without doubt the fever-producing principle is an organic germ, a *contaigum vivum* and is invariably derived from a previous case of enteric fever."

That cholera is spread by human intercourse is so well established as to not need elaboration, but you will pardon one or two brief quotations. Macnamara also states in his discussions that "the more explicit the examination, the clearer the fact appears that the disease (cholera), in the majority of cases, spreads from one human being to another by means of the cholera fomes finding its way into the drinking water, and thus into the intestines of other people."

"I by no means deny," says Pettenkoffer, "the transmissibility of cholera by means of man coming from an infected place. I consider man alone as the specific cause outside of the influence of the infected locality; moreover, I consider him the propagator of cholera, when he comes from a place where the germ of the disease already exists."

What is said of cholera, we believe, upon investigation, will prove true of scarlatina, diphtheria, small pox and tuberculosis. We have ample proof that these diseases had their origin in the old world, and were in all probability spread only through human intercourse.

Diphtheria was first brought to this country through European shipping, and made its first appearance in Boston in 1735. "From thence it extended westward over the British colonies, reaching the Hudson and New York in two years, and after a time leaped over the barrier of the river. It gradually disappeared, attracting no further attention, except as a historical fact, noted by Douglas, Bard, Colden and others."

Scarlet fever also had its origin in the old world, and in its spread has been subject to the same laws regarding human intercourse as the other diseases mentioned. Again, tuberculosis, although known to the inhabitants of every clime,

undobutedly spread like cholera, syphilis and diphtheria, from the thickly populated centres of the old world, and is spread only, directly or indirectly, from animal to animal, or from man to man. That up to a few years ago there were isolated spots on the earth's surface that its virus had not penetrated, is rendered possible by the statement of Gibon, in the Annual for 1890. He says: "According to Certes there are no pathogenic microbes to be found at Cape Horn. The Fuegians did not know anything about small pox, measles, scarlet fever or diphtheria, before the inroads of civilized nations. Prior to the visits of the missionaries even pulmonary phthisis was unknown, and tuberculosis only began to establish itself in that country since 1881." It is said of the North American Indian that, prior to the discovery of America by Europeans, he was entirely exempt from the pestilential diseases. He had, in his primitive state, no ailments, so far as we can ascertain, except such as were incident to exposure and old age. The gold hunters are said to have introduced small pox into Mexico, and the adventurers from the old world brought with them the eruptive fevers and loathsome contagious diseases of vice and immorality which are now found upon the islands and continent of North America.

A French writer is authority for the following statement: "A soldier returned home consumptive, after undergoing confinement in a Prussian military prison. Previous to his return no one in the village had for many years suffered from consumption. He expectorated freely, and it was observed that the fowls swallowed the expectorated matter. These fowls were given to a woman in the village who was in perfect health, and in the course of four months she consumed sixteen of them. She had no direct communication with the patient, but after a time became consumptive. One of the fowls was killed and examined, and tubercle was found in the liver and other organs."

Again, it is said of cholera that the germs cannot retain their virulency long outside of human tissue. Thus, Pollock found that after each invasion or epidemic the germs died out, and with each recurrence there was a new importation of germs.

This would account for the disappearance of the disease in this country after the epidemics which have several times visited us.

That this is true of diphtheria, scarlatina and small pox, remains to be proven, but would appear probable from what has been said of the first epidemic of diphtheria in this country. That the germs must have lost their disease-producing qualities appears from the fact that the inhabitants were free from the disease from 1735 to 1835, a period of about one century.

This disappearance of the disease germ, unless a fresh supply is received from human tissue, would seem to be in accordance with a law of the animal and microscopic world, that neither can exist long in the presence of the poisons of its own excretions. Thus we find in the overcrowding of human beings in jails, barracks and camping grounds, unless protected, they soon die of diseases produced by their own emanations. So the bacteria cannot long survive in the poisons which result from their presence in large numbers.

If, then, every case of a contagious and infectious disease has its origin in a previous case, and is spread directly or indirectly through human intercourse, and the germs of these diseases die unless reinforced from animal tissue, it is certainly fair to assume that if all the disease-producing organisms could be prevented from attacking animal tissue, it would not be long before the virulent germs would have to return to their primitive dormant state for want of nutritive pabulum, and then would the declaration of Pasteur be verified, "That it is within the power of man to cause the parasitical diseases to disappear from the world."

If the principles here laid down are accepted as a working hypothesis, the destruction of the virulent bacteria by isolation, quarantine and disinfection, must form the basis of our efforts to prevent the spread of contagious and infectious diseases. It is true that these are the means usually employed, but it is well for us to remember that all medical writers are not in accord on this subject.

Pettenkoffer, who has given us an extended array of works on cholera, says: "Too much importance has been given to

bacteria as an etiological factor in the spread of cholera, and that the importance of local conditions has been overlooked." He tried to prove his position by taking into his system the cholera bacillus; the cholera bacilli were found in his stools for eight or nine days after ingestion, but his health was not seriously affected. He is also strongly opposed to quarantine, and says that the spread of the cholera germ is not to be prevented, either in India or outside of it, by isolation, quarantine, disinfection, etc. He further says: "Just as in spite of custom houses, goods are still smuggled over the frontiers, so the bacteria and viruses will be smuggled through all our barriers." He regards the millions expended in hunting down the germs as wasted effort, and that it should be diverted to the work of making people and places immune. But notwithstanding the opinion of this eminent author, the fact remains, that, while no amount of overcrowding or filth will originate the disease *de novo*, the water and food supply once contaminated, and all classes allowed to mingle, so few places have been found to be immune, and so few persons so insusceptible to the cholera germ as Pettenkoffer in this instance proved to be, as to make it very unsafe to follow his advice. I have cited this authority more to show how easy it is for eminent men to give adverse views concerning precautionary measures which sanitarians of equal eminence, after a long struggle, have barely succeeded in establishing.

The importance of isolation has long been recognized. A century ago Naples fined and even imprisoned her physicians for failing to report to the authorities cases of tuberculosis, the result being a reduction in the mortality from this disease of 90 per cent.; and despite the fact that at a later period these measures were abandoned, under the impression that this disease was not contagious, recent experience argues that isolation affords the only practical solution of the question of how to prevent the spread of this most fatal of all maladies.

It is said of England, that within the past few years, through improved hygienic conditions and isolation of tuberculous patients, the mortality has been reduced 50 per cent.

Philadelphia, during the past eight years, has reduced her

mortality from phthisis 20 per cent. California, in view of the fact that it is rapidly becoming the great sanitarium for these unfortunates, is seriously considering the importance of the isolation of phthisical patients in order to prevent the spread of the disease.

I need not quote authority to convince you of the importance of this measure in the prevention and spread of diphtheria, scarlet fever, and the other contagious diseases, which we are called upon to treat.

A question of more practical importance is, what are we doing to prevent the spread of disease? Our answer is nothing compared to what ought to be done. I would not for a moment disparage the work of our State Board of Health, or the efforts of our local boards. They are probably doing all in their power, considering the means at their disposal, and the niggardly policy of our Legislature by which they are handicapped. But I am convinced that nothing worthy of the effort will be accomplished until every person and animal threatened with, or sick of, a contagious disease can be isolated and thorough disinfection practiced under the care and direction of a competent bacteriologist. In other words, we will never be successful in our efforts to stamp out the contagious and infectious diseases until a competent bacteriologist is employed to take charge of each case in its incipient stages, and empowered by the state to take such measures as shall completely protect the well from the dangers of contamination. If, as we have argued, a virulent disease germ is abroad and cannot be destroyed so long as it can find a favorable soil for propagation in human or animal tissue, anything short of complete isolation will be wasted effort.

So far we have said nothing of what is being done by inoculation to render persons immune, or prevent the spread of disease.

If we were to judge of the value of this method of preventive treatment by the newspaper notoriety antitoxine has received, it would indeed be a great boon to humanity; but, as you know, the results thus far have been disappointing to the medical profession, and even if man could be rendered immune,

the exceptions would be so numerous as to make it unsafe to depend on that alone.

Much of late has been said of increased vital resistance as a preventive against the invasion of virulent micro-organisms.

In those predisposed to tuberculosis, this is undoubtedly an important factor. But in cholera, small pox, diphtheria, syphilis and scarlet fever, comparatively healthy persons are attacked, and if nothing in the physical condition or hygienic surroundings of the human family at the present day can produce the disease without the specific germ, as it has come down to us through propagation in human tissue, vital resistance would be of secondary importance compared to isolation, disinfection, quarantine, etc. In other words, if these measures are faithfully carried out, there would soon be no germs to attack even tissue of lowered vital resistance, unless the conditions of the old world by which they were first aroused from their dormant state were recurrent. The results attained by vaccination in small pox would seem to encourage a trial of this method of preventive treatment in other diseases, but we must not forget that while vaccination was a great discovery, and has done much to prevent the spread of small pox, we are also very largely indebted to isolation, quarantine and disinfection, for the immunity we enjoy from this disease. Indeed, I believe it is fair to assume that had it not been for the increased immunity made possible only by isolation and quarantine, mankind would have long ago lost confidence in the protective power of vaccination, and abandoned it as a useless procedure.

That there are almost insurmountable difficulties in the way of carrying out the measure proposed for the prevention of the spread of disease we frankly admit, but, nevertheless, the fact confronts us, that unless we can prove the correctness of our theories by the results obtained, the laity will soon lose confidence in our teachings, and refuse to coöperate in our work, and what has been regarded as the greatest discovery of the age—the transmission of disease through micro organisms—may pass into oblivion, because of the stupidity of the laity and the want of faithful, persistent, courageous effort on the part of sanitarians and the medical profession.

A summary of our "thoughts" then is:

*First.* That non-virulent microbes exist in all parts of the habitable globe.

*Second.* That they were made disease-producing in the case of cholera, small pox, syphilis, diphtheria and tuberculosis in the thickly populated centers of the old world through overcrowding, and bad hygienic conditions, such as have never been known to us.

*Third.* That the virus is always derived from a previous case, and is spread, either directly or indirectly, through human intercourse.

*Fourth.* That increased vital resistance renders persons immune only in exceptional instances, and in tuberculosis.

*Fifth.* That if virulent bacteria could be prevented from finding a lodgment in human tissue, they would, for want of nutritive pabulum, soon return to their primitive dormant state.

*Sixth.* That isolation, quarantine and disinfection, under the direction of bacteriologists, are the only means by which we may hope to successfully prevent the spread of contagious and infectious diseases.

## DISCUSSION.

DR. KNAPP.—The value of a working hypothesis is too little recognized by the profession. "Gravitation," "The nebular hypothesis," "The conservation of energy," are hypotheses upon which a great deal of our science, general science, is built. I have called attention to this before in presenting a hypothesis of therapeutics. The paper this evening is another fine example, and is well borne out by the facts of the germ theory of contagious disease. It is the first complete statement of what is held by the majority of bacteriologists, and I congratulate the doctor upon it; it is a very complete refutation of Tait and answers very many objectors. The value of this paper is to the sanitarian, who has here a very reasonable ground to work upon, and if fully carried out would prove as successful as aseptic surgery. There is a vast difference and all from laboratory work, between the antiseptic method of Lister, that of killing, by chemicals, the germs in the wound, which research proved to be impossible, and our present aseptic surgery or preventing the access of germs to the wound, and which I doubt not will prove as efficient in prevention of disease.

This hypothesis rests upon the doctrine of evolution, and rightly so, because it is in these unicellular and simple cellular forms that we see

the greatest changes from environment, food, and acquired characteristics, Wiseman to the contrary notwithstanding. But we can leave that gentleman to Messrs. Spencer and Mivart. I agree with the paper in its conclusions. I only wish we could put them into practice. The results in a decade would silence the opposers of the present doctrine of contagious and infectious diseases.

DR. HAKES.—No paper has ever been read before this society which per force, invites the attention of the medical profession to so large a field for serious thought, for careful observation and experiment, for thorough cultivation, and apparently so rich in possibilities of practical and vital results. The ideas are not entirely new to us, for there has been, for some time past, an indefinite suspicion, among the best thinkers in the profession, that there lurked somewhere and somehow, beyond our observation, specific causes for diseases called contagious or infectious. Nor has the profession entirely failed to note that in a changed etiology and pathology of these awful scourges of our race, former modes of treatment, and attempts at cure, are not entirely satisfactory, or by any means successful. The paper is a bold challenge of the old theories and practice. It is a clarion blast summoning the profession to new and improved methods of warfare against ever present foes, the existence of which, until recently, were unsuspected and unrecognized, and against whose deadly warfare the battering rams of medicine have been almost harmless. As regards the most fatal and devastating diseases which afflict our race, a revolution is foreshadowed, in fact the war is declared. Willing or unwilling we are soldiers until defeat and disaster drive us from the field vanquished, or glorious victory is emblazoned on our banners. About the sorest part of the trials we must endure is to yield up and discard our former opinions and dogmas, the teaching of the fathers. It is always thus whether in law, medicine or theology. It is a hard matter to be compelled to cast down and trample upon idols long worshipped. True manliness and courage is never better manifested and exemplified than in bidding farewell forever to the long adored but useless past. In the new philosophy, both theory and practice, will be recast, it is hoped, in a better and more durable mould. We already have the data and are far enough advanced in thought to warrant us in fair attempts to forecast the terminal ground whereon we must eventually pitch our tents. Our surgery is already completely revolutionized. The theory and practice of medicine, so called, has been, from earliest ages to the present, the open stamping and camping ground, whereon ignorance, superstition and fraud have revelled and deviled quite long enough. We have inherited entirely too much of the miserable useless and pernicious trash. We are not alone at fault for this. Conservatism is the bane of all professions. In law and theology, even a greater obstacle, if not curse, than in medicine. Kill all innovators, is the rule and rallying call. That is the instruction we received from the fathers, and these again from their fathers.

We, gentlemen, will not say "Amen" to that. The imagination must not rule the reason in the new philosophy, nor fancy be substituted for fact. It is not among the monsters, in size, either in the air, ocean or earth, that me may look for our most dangerous foes, nor is it worthy of us to charge the ever present dangers of disease to the wrath of God, or the cunning and crafty designs of the devil. Such ideas never direct nor suggest the possibility of successful remedy. In our contest against the germs of contagious and infectious diseases, we are beginning to understand their nature, character and mode of operation. I, of course, use the words war, battle, &c., figuratively, but not, perhaps, entirely so, for, by the strictest analogy, this is just what it amounts to. We must kill or disarm these death-dealing germs or they will kill us; practically war to the knife, and knife to the hilt. Compromise is no safer than surrender, and surrender is death. It is in this microbean realm of living things that we are finding the causes of our terrible infectious and contagious diseases. Our former equipments have not served us well as against their ravages. New modes of attack, new weapons and new destructives are in order. Our most successful mode of warfare is by capture, isolation, imprisonment with barricades, that enable us to command the enemy to stand back; it shuts up small pox in a single house, and successfully challenges cholera on the length of five hundred miles of our sea coast. Of course in our new mode of warfare, we make not much account of good faith, courtesies or fair dealing.

As to a first origin of these germs, the paper of our brother tells us about all that is known, or perhaps ever will be. That they are things of life, energy and persistent vitality we already know very well. That this origin is as certain and their lineage as respectable as other living beings we can not gainsay. So far as we may know, they have the same origin as mice, bedbugs, whales, dogs, horses and men. To them, life, liberty and the pursuit of happiness, is a right as precious and sacred as among the children of men. They have power of movement and migration, choice of food, appetites to gratify, and choice of company and companions. Unfortunately for us, they choose our bodies for hunting grounds and habitation. Some choosing the outside and others preferring the inner parts: of nerve, brain, muscle, gland and blood. We seem to be their playground, their grand hotel, their business centre, their arena for sacrifice and slaughter. While one, satisfied to burrow in the cutaneous covering, finding at one and the same time and place, satisfactory food and lodging, another prefers the tender mucous membrane, and in our throats, to watch our mastication, and our kind of diet and drink, listening meanwhile to our musical voices without paying entrance or admission fee.

The typhoid curse is a refined gourmand. He or she, or both, go further down, to plow and puncture Peyer's glands, submitting to the malaria of the place, in order to gratify a refined appetite, there to dwell, marry,

copulate, multiply, and raise hell (pardon the expression, but will I stand much upon human etiquette with so vile and deadly a foe to human life).

No! gentlemen, in dealing with these, our foes, we stand not at poisoned arrow, explosive bullet, bribes, spies, or any other fair or unfair means. We must kill them or they will kill us. With fire, sword, wind, water, poison, alkali, acid poisoned gasses, &c., we will contend and fight. But failing in this we are not to yield the field. Our analogy serves us still, and perhaps the best is reserved for the last shot. If we can turn these destructive hordes against each other, for instance, the diphtheria germ against the syphilitic germ, mumps against typhoid, yellow fever against cholera, measles against erysipelas, scarletina against cerebro-spinal meningitis, vaccine against small pox, this is the point I wish to impress, here is at least a reliable cue to guide us in similar attempts. Here we are in touch with some facts and much expectation. Every vegetable growth and every plant as well as animal, whether beast, bird, fish, insect or microbe has, and is infected with, mortal enemies. Self preservation is the universal first law for all life, and we need scarcely pray God that the fittest may survive. Thus it is. It is not a contest of physical strength always. Each life fights with its best weapon, with its best judgment and skill. Those surviving are entitled to the fruits of victory. Our brother has stated the problem well, a sort of skirmish shot to open the ball. The war is on. Gentlemen, it is for you to be good officers and soldiers, and as I have suggested, if we shall be able to turn these common enemies one against another, let us hope that amid the smoke and fire of their battle and confusion, man, alone, may escape to safety, midst the babel and confusion of the mortal struggle.

From our present standpoint, our best means of antagonizing infectious and contagious destruction is isolation, sanitation, antiseptics; and this prompts me to remark that it is high time our good city should have a Board or Department of Health, composed not of ordinary constables, shoemakers, stone cutters, merchants or butchers. I predict that if a competent doctor will visit every house and premises in the city, with power to enforce such sanitation as is now well recognized and approved by the best members of the profession of medicine, that within six months we might boast of the cleanest city in the country, and enjoy such a standard of immunity from contagious and infectious diseases that the dread and danger attending the same would soon be lost in the forgotten past. The commonest observer realizes the improved health of our city, by reason of clean and improved streets. To that desirable end this society contributed very largely. We must have an improved water supply, and you, gentlemen, will have it, if you so determine. Commerce and trade are necessary, but such is the selfishness and greed, urged by increased competition, from those engaged in such associations, that it matters not to them whether we have pure and healthy water, proper sewerage, safe plumbing, dirty streets, and disease breeding cellars and gardens.

Adulterated foods, yes, adulterated drink, drugs, and medicines are largely the order of the day. Were it not for the medical profession, to point out the dangers and to force the remedies for the common protection, we might well, in despair, call upon the gods to do the dirty work for us, that we refuse to perform for ourselves.

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## THE AXIS TRACTION FORCEPS.

BY DR. MARIS GIBSON, WILKES-BARRE, PA.

READ APRIL 17, 1895.

"But if all these medicines profit not, there must be used more severe and hard remedies, with instruments, as hooks, tongs, and such other things made for the nonce. And first, the woman must be laid along upright, the middle part of her body lying higher than all the rest, accompanied with women assisting her about, to comfort her and keep her down, that when the birth is plucked out she rise not withal. Then let the midwife anoint her left hand with the oil of white lilies or other that may make it souple and smoothe, and holding out her fingers, shutting together her hand, let her put it into the matrix to feel and perceive after what fashion the dead birth lyeth in the mother's womb, so that she may the better put in hooks and such other instruments to pluck it out withal." This selection is from the quaint old book of Thomas Rainald, called "The Woman's Book, or the birth of Mankind," published in England in 1565, being the first English book on midwifery of which we have any knowledge.

The practice of midwifery commenced in the earliest days of the human race, arising, as other branches of medical and surgical matters, from the needs of the people. Progress was, however, very slow. Hippocrates had an instrument, or more than one, for the purpose of assisting in difficult cases of labor, merely to extract the child without any reference to saving its life, and Galen describes something of the same kind. Rhazes, the Arabian, makes some reference to the use of the fillet in the 10th century, and Avicenna, one hundred years later, men-

tioned the forceps by name, but his forceps had blades containing teeth to take hold of the fœtal head.

The first forceps made anything like those we have now, was that of the Chamberlain's, made in 1650, or about that time. This was a crude form of the short forceps with straight blades, having only the cephalic curve. From this has come, in a direct line, the whole vast multitude of obstetric forceps, some few of which have become famous, but the most only known to a small circle of the friends of the inventor, a few even never having passed the stage of drawing on paper. "Pajot once observed that he does not reproach a man for having invented a forceps, for that might happen to any one." The forceps of Chamberlain was practically the one form used for about one hundred years. They were different, but alike in having but one curve, and being short and straight. It could be used only when the head had descended to the pelvic cavity. About 1752 Levret, probably first, and Smellie soon after, added the pelvic curve. The present lock, such as the Simpson forceps has, was probably made before the time of Smellie, though Simpson calls it Smellie's lock. Tyler Smith says the lock was Chapman's. About this time the forceps were made longer, so that, with the added curve, it could be used under all suitable conditions of labor. The French forceps were from the first made longer and heavier, and much stronger than the English, and this was a really formidable looking instrument. One of them described in Ramsbotham's book was 19½ inches long and weighed 2 pounds and 5 ounces.

For more than another hundred years this was all the essential change made in the forceps. There were changes many and various, and improvements, but they were essentially the same forceps, having the two curves, pelvic and cephalic. Out of this the Simpson forceps were evolved, which he said had the Ramsbotham blades, which were essentially Smellie's, the Smellie lock, the Naegle handles, and his own longer shanks. And the Davis forceps, with blades carefully calculated to nicely fit the sides of the fœtal head. And our own Hodge, who taught so eloquently the "Mechanism of Labor." How

"the irregular convexities of the head fitted themselves to the irregular concavities of the pelvis, so that the more difficult the labor the nearer will be the approximation of the different circles and planes of the cranium to the planes of the canal through which it has to pass." And many others, that are mostly combinations, in different forms, of different parts of some others. But to-day a competent man would not be very badly off, in a usual forceps case, if he had with him a good Smellie forceps. He would be much better equipped than Dr. W. C. Blackman was, who practices in Davidson county, Tenn., who says, in the *Medical Record*, that, being far from home and having no instruments with him, he delivered two cases with a shoemaker's forceps, and both mothers and children lived and did well. The worst thing about the Smellie forceps was that they were covered with leather, and certainly could not be made aseptic. But this was a time when it was a usual custom to cover the blades with some kind of soft leather or gutta percha. Ramsbotham discusses this practice and says: "It was the old fashion to cover each blade entirely with leather, that it might be less formidable to sight; that in locking it little noise would be made; that it might be softer to the woman's person and not so likely to do injury." This practice was, in his opinion, objectionable on many grounds. It takes up room, and is not so easily applied, and, more than all, "it has been supposed that infection, the virus of syphilis or gonorrhœa for example, has been carried from a diseased to a healthy person." He suggests that "if such a sad accident could be possible, the coating should be abandoned or changed every time it is used."

He says, further, the only coating I would admit is one of gum elastic or silver wash. He quotes from Wallace Johnson (new system of Midwifery, 1769), who says: "If the instrument is covered with wash leather, humors which are infectious may be absorbed and conveyed from one patient to another." He recommends that morocco leather be substituted. He adds: "Indeed, danger may arise from this also, if care be not taken to wash them very clean with soap and water after every time that they are used. Nay, rather than neglect this I could

wish them not to be covered at all." Ramsbotham says, in a foot note, that Simpson's forceps are coated with gum elastic, which is not liable to the same objections as a coating of leather. All this may seem strange to us, who live in this aseptic age, but it was many a long year after that when sponge tents were used to dilate the cervix and pieces of sponge to tampon the vagina.

Chapman, who wrote the first description of the forceps, calls it "a noble instrument," and Smellie was the most noted champion of it; but when Bard came to write his book, the first treatise on midwifery in the United States, while he quoted many other writers, he made no mention of Smellie's teaching only to say that he considered him a dangerous man and his teachings unsafe. I have read somewhere of a physician who said he liked to see a doctor show a rusty forceps, for that proved that he did not often use them. Blundell says, quoted by Dewees, " I do not like to see an elegant pair of forceps. Let the instrument look like what it is, a formidable weapon, *Arte non vi* may be usefully engraved on one blade and *cave perineo* on the other."

The next change in the forceps is the present, the axis traction era, and the essential thing added to the forceps by this is, in some form or other, the perineal curve, so that traction can be made in the line of the pelvic axis. This is accomplished either by having the handles bent so as to clear the perineum when traction is made in the pelvic axis, or by tractions rods attached somewhere to the forceps, for the same purpose. Herman had traction rods in 1840; Hubert had traction rods in 1860; Morales made a perineal curve in 1868, and the same year Aveling brought out his sigmoid-shaped forceps. But nothing much came of any of these until Tarnier presented his instrument in 1877. Since that time the subject has been much discussed, and several physicians have essayed to devise axis traction forceps. Of some of these I have only been able to find the name in the instrument maker's catalogue. That is all I know about Howard's Tarnier in Ford's catalogue, Braun's triform, Corning's and Burges' forceps in Tiemann's catalogue. Galabin of London, Knox of

Chicago, and Dewees of Kansas made longer handles and a perineal curve like Aveling's sigmoid forceps.

Wells and Maher of New York, Briggs of California, Dewees of Kansas, Steavenson of Scotland, all have traction rods drawing from the lock. Prendergast of Philadelphia and Reynolds of Boston have loose traction rods drawing from the fenestraæ. The Brews and the McFerran have a hinge in the blade; the Brews having traction rods drawing from the hinge about midway of the blades. Langstaff of New York has a Simpson forceps with a flat metal plate, five or six inches in diameter, and chain fast to it. He places the plate under the sacrum of the patient and throws the chain over the forceps at the lock after it is applied, and it does for him just what the Smith and Pajot movements do with the ordinary forceps. It exerts a downward force between the head of the child and the hands of the operator, and so draws the head away from the pubic bone. The McGillicuddy of New York, Fisher of Salt Lake City, and Grattan of England, have handles like the old Hubert forceps. The McGillicuddy has a Simpson forceps with traction handles that fit to the end of the handles of the forceps; the Fisher, a bar that fits over the lock; and in the Grattan the handles of the forceps are jointed near the lock, so that they bend down. The Jewett, Milne-Murray, Lusk, Cullingworth, Simpson and Poullet have the traction principle like the Tarnier's.

Looking over what has been done in this field, and reading the different papers and discussions that I have had access to, this conclusion is reached: That the axis traction principle is correct; that it is an event in the development of the forceps like the cranial curve of Chamberlain and the pelvic curve of Levret and Smellie; but that the earlier ones were heavy and complicated and unmanageable, and the later ones are in the line of advance and improvement.

I have arranged in classes the different forms mentioned.

1. The sigmoid of Aveling.
2. Traction rods drawing from the lock.
3. Traction rods drawing from the fenestræ.
4. The hinged blades.
5. The plate and chain of Langstaff.
6. The traction bars of Hubert.
7. The Tarnier class.

I would eliminate at once the 1st, 4th and 5th, as not coming up to the requirements of the work. However, Doctors Barnes, Robert and Fancourt, in their book, consider the Aveling to be as satisfactory as the Tarnier.

The 2d, 3d and 6th are practically alike in their action. They are simple, easily applied, and cheap—all good qualities. The loose traction rods can be applied to any forceps. Maher, however, has applied his to the Simpson, and has changed the handles and made them much more elaborate. Of those having traction bars like the McGillicuddy, when the bars are removed there is left an ordinary forceps; so in using any of these only one forceps would be necessary. Dr. Maher's traction rod is worked out on mathematical principles, and he makes strong claims for its efficiency, but not more that Dr. McGillicuddy does for his.

Now, we have left only those of the Tarnier type, and these carry out the axis traction idea more fully than any of the others. Maher argues that there is no need to have four shanks passing into and through the vagina, which occurs in the Tarnier instrument, but there is certainly a difference between drawing on rods attached at or near the centre of the head in the axis of the pelvis, and drawing on bars at the ends of the handles or attached to the lock, and the use of the handles as an indicator of the position of the head is certainly of much account. Maher calls his the ideal forceps, and it will undoubtedly do good work. And Prof. Keiller, describing the Milne-Murray instrument, calls it the ideal tractor; but what is an ideal tractor? Suppose we have a normal pelvic canal, and a normal head ready to engage at the brim, and normal maternal forces to drive it along. The head will enter the canal, and be propelled along the way, changed in its course by its own form and that of the canal. It will be extended and flexed, advance and draw back, rotate on and on, changing its direction at every point of the way, because the canal changes, until at last it rolls out of the vulva, and nothing has occurred that is not strictly natural and physiological. But suppose it is arrested at the brim or anywhere else, because either the forces are deficient, or the head is slightly too large,

or the passage slightly too small, what shall we do? Why, just supplement the deficient forces, or add to them enough to overcome the difficulty, and not to change any other condition; not to change the direction, nor the rate of its movements. If we could take hold of it with our hands we would soon feel, almost by intuition, how to exert the necessary force. Again, if we could put about it a network of some material, like the silken net of a balloon, with a strong cord at its center, and then could draw in the axis of the pelvis, which, at the brim, is in a line falling from the umbilicus to the point of the coccyx, and changes at every point till, at the vulva, it is at right angles to this line, we could easily supplement the natural forces, and accomplish delivery. But these things we cannot do. If we can, however, place on the head the blades of a forceps and attach to them traction rods, so placed that in use of them the head would not be changed in its relation to the pelvis, except its own natural advance; would be neither flexed nor extended, would be entirely free to rotate naturally, and only be drawn along in its correct line of advance until it was delivered, that would be ideal axis traction, and the forceps that would do that the most easily, with none at all or the least injury to the maternal or fœtal tissues, and having the fewest complications, and that could the most easily be made aseptic—that would be the best forceps. And the Tarnier principle does that more fully than any other. But taking, as it does, the character of French forceps from the days of Baudaloque, the Tarnier forceps is heavy and complicated and unmanageable, and some of its modifications are preferable.

The best of these are the Simpson, which is the classical forceps of Sir James Y. Simpson, with traction rods added by Prof. Alexander R. Simpson, the Milne-Murray modification of the Simpson, and the Jewett modification of the Murray. Prof. Lusk's modification of the Tarnier is equally good. He recommends his in all high operations, in cases of occipito posterior, and in breech cases.

Prof. Jewett's practice is to draw down the head with the axis traction forceps, and finish with the others. He has delivered with the Simpson, and also with the Murray, and in

those cases has been unfortunate enough to have a ruptured perineum. He, however, does not charge this to the forceps, for he says that certain perinei will rupture under any treatment, and with this I think we will all agree. He says, further, "In my experience, without episiotomy, lacerations at the vaginal orifice occur in 15 to 20 per cent. of first labors in spite of all other precautions with or without forceps. The Drs. Barnes consider the A. R. Simpson and the Lusk the most notable modifications of the Tarnier. They say: " We have used Simpson's, which the professor lengthened at our suggestion, and find it to work well. But we are unable to find any definite improvement upon Tarnier's last model. Prof. Lusk says the A. R. Simpson forceps are valuable when the head is in the pelvic cavity, but when it is at or above the brim he uses the Tarnier model with a perineal curve. Prof. Leishman says that while Tarnier was working at his idea of axis traction, from 1877 to 1879, he made no less than thirty different modifications of the instrument.

Herman, in his book, "Difficult Labor," London, 1894, after describing this forceps, and speaking of its uses and advantages, says that "its defects are, first, its complexity, the number of joints and crevices in which dirt may lurk, and hence greater difficulty in keeping them clean; second, the continued compression of the head while it is applied. If forceps were often required when the head was above the brim, the advantages would outweigh the defects. But in nineteen cases out of twenty in which forceps are required, the head is in the pelvic cavity, and the ordinary forceps will do just as well as the axis traction. In most cases in which assistance is needed while the head is above the brim, turning is better than any forceps." The most enthusiastic followers of Tarnier's idea are the Edinburgh School, and I shall refer here to a paper* written by Prof. Keilbeer, of Galveston, Texas, an Edinburgh graduate. Speaking of Tarnier, he says: " Like all innovations of sufficient importance to attract general attention, his ideas met with much opposition and some ridicule; but, nevertheless, the principle of axis traction forceps on the true Tarnier lines

*American Journal of Obstetrics, April, 1893.

are now acknowledged by the most advanced teachers to be the true principle, and the only scientific instrument applicable to high and even low forceps operations, so much so that no Edinburgh specialist carries any forceps in his bag but some form of the Simpson-Tarnier type, and few recent Edinburgh graduates think of buying any other form of instrument."

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## HYSTERIA.

BY DR. JOHN S. HILEMAN, PITTSTON, PA.

READ MAY 1, 1895.

This term, though ordinarily applied to a morbid state of the nervous system in woman, I choose to take as applying to both sexes, thus covering the different forms of hypochondriasis. I use the defining word morbid in this connection, for with all our advances in medical knowledge this, above most other states, is not well understood. The primary derangement is in the higher nerve centres; but all the lower centers, cerebral, spinal and sympathetic are more or less affected. Hence the manifestations are most varied. As is so common, the name is a misnomer, for rarely does the womb have any causative action in this disease, still the derivation of the name is interesting as showing the ignorance of former times; for we find that, among other mistaken ideas, it was supposed the symptoms were produced by the womb moving to different parts of the body. Hippocrates and Galen both recognized this trouble, and many modern writers have followed their footsteps in recognizing a distinctly hysterical temperament or diathesis; but such a state, I believe, does not exist.

In the foremost rank of causes I would place sex, race, civilization and age. As to civilization, the higher the cerebral development, the more frequent and greater the display of hysterical symptoms. As to race; in those races which have as a national temperament the nervous constitution more highly developed (as the French), hysteria reaches a higher

degree. As to age; in 50 per cent. of all cases the disease is first manifested between the years of 10 and 20; and in nearly 33⅓ per cent. between the years of 20 and 30.

From these figures the proportion falls till only one per cent. of all the cases occur in those over 60 years of age. As to sex; the great majority occur in females. Heredity is another potent factor as a cause; either directly or through allied neuroses. Married people are less prone to hysteria than are the single. The direct or determining cause may be either mental or physical, or as is often the case, both combined. And here we have opened out to us the whole life of the child, even from the time of conception. With the present state of life among many of the members of the higher classes, one might wonder that this disease is not more often displayed, but the reality is he sometimes wonders if it is possible for it to be displayed more frequently. The mother, with her high strung, overwrought nervous system, leading a life (certainly through the early months of pregnancy) that overtaxes her strength even when not in that condition, cannot bequeath to her offspring that heritage of nervous health and strength that should be his by rights. How often do we see these young children going through their lives with scarcely any outdoor exercise. How they must literally "cram" themselves with the knowledge of the so-called higher education, even before they have left their swaddling clothes. Do we not know these young girls by scores, till their twelfth year, robust and ruddy cheeked? Then alas, the constant strain of poring over books in and out of school, the lack of healthful home exercise and life, the exotic existence they are allowed to lead, coupled with their age, begins to tell, and ere long the unhappy patients display the customary train of symptoms. Is it any wonder that gymnasia are springing up in every hamlet? In probably 45 per cent. of all cases there exists some disorder of the generative system, but the cause and effect of these troubles are difficult to estimate. Though as before stated too much stress has probably been laid on these disorders as a cause. Moral contagion is sometimes an interesting causative factor. Occupation is sometimes a cause, as workers in quicksilver

and carbon disulphide. Traumatism sometimes causes hysteria. As a conclusion to this brief summary of the causes I would cite other diseases. Almost every known disease has been held responsible, but especially do organic and functional nervous diseases act as causes. S. Wier Mitchell has aptly said: "The symptoms of real disease are painted on a hysterical background."

The symptoms may be divided into continuous and paroxysmal; or, as another author classifies them, cerebral, spinal, and mixed. Of the continuous symptoms the mental state is most marked. The will power is defective, there is loss of self control; often, too, an irritable temper. Added to these, there may be later a low moral tone, so that symptoms may be intentionally simulated. Leading up from this we find Russel Reynolds' "idea paralysis"—designating the highest form of "moral contagion." Emotion is freely expressed; laughter and tears will quickly alternate. The oft repeated globus hystericus is but a result of these profound emotions All sensations may be felt with abnormal acuteness. Again, here, it is often difficult to tell how much of this is actual and how much depends on the description of the patient. It is essential in this complaint to always bear in mind the habits of exaggeration. The special senses may be abnormally acute. There may be Riche's hysterical spots; tender points found especially over the ovaries, the spine, the hypochondria, and occasionally the infra-mammary region, the thorax, and belly. At times there is found false peritonitis. As to subjective pain, that in the head is most common, though fleeting pains occur in all parts of the body, as in hysterical joints. The character of the head pain varies, but is often described as if a nail were being driven into the head. The special sensations, noises and sounds, flashes of light and other optical delusions, odors (agreeable and disagreeable), and tastes are complained of. The sensations as of water trickling down the spine is met with. Sensation is very commonly lessened in all degrees, from a small surface affected to hemianæsthesia. When complete, neither heat, cold, nor a needle prick is felt; nor can weight and form be often ascertained. This anæsthesia may

affect the mucous membranes that are accessible to examination, though it is to be doubted if the internal ones are thus troubled. This lack of sensation may vary, not only as stated, in regard to extent, but as to any or all sensations, and from a slight to profound alteration. And similarly all symptoms of this disease may change from one moment to another, and there may be a transfer induced. In connection with the loss of sensation, the acuteness of the special senses may be diminished.

Paralysis is common, and as in anæsthesia may vary in character, and in the part and amount involved, and also in its continuance. Its onset, likewise, may be sudden or gradual, and it may affect the muscles of any or all special senses. Incoördination sometimes occurs, especially in the extremities. The changeable character of hysteria is nowhere more apparent than in the spasmodic symptoms. The persistent tonic or clonic spasm occurs, also the paroxysmal convulsion. The persistent forms may attack a leg, an arm, the muscles of mastication, or it may be general or in various combinations. Now and then the clonic type forms the so called hysterical chorea. Either the tonic or clonic spasm may last for years, and the tonic may make the subject so rigid that he can be placed in any attitude, and the attitude maintained for a considerable length of time. Thus the arm may be suspended in an extended position. This rigid condition is said to give a characteristic objective feeling to the muscles of the part affected, a sensation peculiar to this condition. Tremor of various parts is common, as for example, that of the tongue.

Among convulsive phenomena are the globus hystericus (the most frequent) and the other manifestations of emotion. In these excessive emotions the more severe are associated with irregular movements of the arms, legs and head (though in rare instances these movements are regular) and the back may be arched. In fact, it is the convulsion of "Hysteria Minor" of the French. In the more severe attacks of "Hysteria Major" there is the so-called hystero-epilepsy in which rigid opisthotonos (rarely pleurosthotonos) alternates with the wildest movements of the arms, legs, head, even the

whole body. The sight of one of these spells is one of the worst to which sickness can treat us. There is neither frothing at the mouth, nor is the tongue bitten. Consciousness, to all appearance, may be lost, and warnings of different kinds are not uncommon, as the globus. These convulsions may last from a few moments to several hours, and intervals of absolute or comparative quiet may occur. The eyelids are usually closed. These convulsive attacks occur most frequently in young girls about puberty, and are by no means rare in young boys and may occur in young men. As sequelae to slight epileptic fits their importance is great and perhaps may explain those few cases which occur during sleep.

The symptoms which can be referred to the brain include those which are a perversion of the functions of the higher centers. Thus there are instances of trance or lethargy, with or without catalepsy. In some cases the mental state of the hysteric raises grave doubts as to whether or no the person is sane, while in other cases the limits of insanity are distinctly passed. Then, too, the end of fits of major hysteria is often an attack of violence, which makes it hazardous for the friends of the patient. As stated, the moral tone is much lowered. Deceit, mischievousness, petty thievery may occur, and extremely rarely, exposure of person. Hallucinations, delusions and illusions, sane and insane, are of frequent occurrence.

Digestion, circulation and respiration are apt to be deranged. In globus hystericus swallowing may be impossible, also in spasms of the œsophagus. Actual vomiting, in contradistinction to regurgitation, which occurs in the two last conditions, is a frequent symptom, causing those remarkable cases of "fasting girls." Sometimes there is gastralgia. Every form of dyspepsia is common, constipation and flatulence also. Not unfrequently there is rapid breathing, up to 80 per minute, and with this the pulse may be normal. Actual dyspnœa may follow laryngeal spasm.

The heart may be habitually frequent, is readily accelerated or made regular. Sometimes the pulse ranges from 120 to 130 beats per minute, and there may be attacks of severe pseudo angina pectoris. Rarely the heart's action is less frequent than

procedure as an operation without there being an apparent lesion.

The alterations in the nervous system, such as paralyses, spasms, etc., seem to vindicate the use of static electricity, for with this agent the shock produced is far more profound than with any other form of electricity.

In conclusion I will relate a case of severe major hysteria, with the concomitant symptoms of opisthotonos, the arms, legs and body wildly thrown about, till it was almost impossible for from 3 to 6 attendants to hold the patient in bed. There was loss of consciousness, and the patient was profoundly anæsthetic; and reflexes were abolished. The urine just after the attacks was pale, abundant, of low specific gravity, contained a few oxalates, and had no albumen nor casts in it at any time. There was no rise of temperature. The patient was a female, aged 37, married for 18 years with no children. She had the usual diseases of childhood, typhoid and malarial fever (intermittent) and for some years had manifested hysterical signs in the shape of headache, minor neuralgic and emotional symptoms. The family history showed chorea in a sister, with a mother dead of childbirth hemorrhage, and a father of phthisis; otherwise, family history negative. The attacks, for I saw some ten of them during 1892 and 1893, occurred about the time of her menstrual periods. At first I had to resort to chloroform, but at last in desperation I hypnotized her, and though in about three months she drifted from observation on account of removal from town, I never saw a return, and from the onset of the convulsions she had on an average one every two months, and had not been free from them longer than ten weeks at a time. I had to try twice before I succeeded in inducing hypnotism.

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Dr. Fell exhibited a dermoid cyst removed from a patient at the Hospital, also a cancerous uterus removed by hysterectomy. Dr. Murphy, in commenting on these specimens, said that the operation of hysterectomy was one of the easiest in surgery, and no one should hesitate to perform it.

Dr. Stewart said: "I cannot let go unchallenged Dr. Murphy's remark that hysterectomy is one of the easiest operations in surgery. It is not an easy operation; in fact, it is a very difficult and dangerous one. True, our cases have recently done well, but if any of you think the operation easy, try it, and you will find your error."

Dr. Murphy: "My remark referred to cancer of the cervix, in which there are no adhesions. Then the operation is easy; with fibroids and other trouble it is difficult."

Dr. Mahon: "What Dr. Murphy says of hysterectomy may be true in the earlier stage of cancer. I saw an operation last winter in which hysterectomy proved to be a very serious affair. The wound was friable and broke down at once. The operation was performed by the combined vaginal and abdominal operation. The patient had been refused operation three times. She collapsed twice during the operation, and after being removed to her bed had a serious secondary hemorrhage. On the fourth day she sat up, and finally recovered."

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Dr. Mahon reported the following case of brain injury:

John S., aged 21, residence Yatesville. Sustained a penetrating gunshot wound of head on Thursday, April 18, 1895, at 7.45 P. M., from the effects of which he died on Saturday, April 20, 1895, at 11 P. M.

The wound was located upon the occipital bone, horizontal with and one-half inch to the right of occipital protuberance. When I first saw him (four hours after the injury) the wound was surrounded by an area of tumefaction one and a half inches in diameter with an elevation of three-fourths of an inch. The aperture in the bone admitted the introduction of the end of the little finger of the right hand. There was considerable hemorrhage and oozing of brain substance. A small probe, introduced without force, followed the track of the bullet to the depth of four and a half inches in the direction of the right supercilliary ridge of frontal bone. Bullet could not be definitely located. Gauze draining was introduced and wound dressed antiseptically. Twelve hours after the injury the eyes were congested, blood-shot, right more than left; pupils contracted, right more than left; nose flattened, swollen; slight epistaxis, vomiting. Temperature 100–102½. Semi-comatose from time of injury until twelve hours preceding death. At intervals talked coherently, giving a fairly intelligent account

of the circumstances attending the shooting. Twelve hours preceding dissolution, complete loss of consciousness, breathing stertorous, pulse 160, death.

Post mortem.—Bone but slightly shattered, meninges injected, discolored, extravasated in and around the course of the wound. Bullet was found imbedded in right inferior frontal lobe of the brain, resting upon the orbital plate of frontal bone.

Dr. Stewart referred to a case of brain injury which he had seen recently in Ashley with Drs. James and Guthrie. A boy had been shot with a Flobert rifle and the ball had entered the brain through the frontal bone. Pupils were normal. A probe passed by its own weight about three inches. Patient was trephined over the wound and a spicula of bone from the inner plate removed. Clots also removed, free drainage established, and the patient is now doing well. (See report of meeting of June 19.)

Dr. Mahon: "By trephining you have added another wound to the one already existing, and the surgeon in such a case is quite likely to be annoyed by legal proceedings."

Dr. A. G. Fell: "I think the authorities agree to-day in placing the patient in such position that the probe can pass vertically into the wound. If it locates the bullet, the patient can be trephined on the opposite side and the ball removed. The most danger comes from a spicule of bone being driven into the brain from the inner plate. Hence the importance also of enlarging the wound of entrance, removing spiculæ of bone if found, and establishing free drainage. This is good surgery. The physician should not question as to what the District Attorney will say. We go to him for law and not for medicine. Our duty is clear; we should go ahead regardless of consequences."

# GRAVES' DISEASE.

BY W. O. DAVIES, M. D., WILKES-BARRE, PA.

READ MAY 15, 1895.

With the introduction in recent years of thyroid feeding, the use of the animal extracts, anti-toxine, etc., for the cure and prevention of certain diseases, those affections to which this form of therapy applies, have received especial attention. Among them may be named in this relation, Graves' disease, called also ex-ophthalmic goitre and Basedow's disease.

A young practitioner is always limited in his selection of a subject in which he can bring any personal experience into the essay. One of the first cases that I was called to see in beginning practice was one of ex-ophthalmic goitre, and since that time I have had the opportunity of studying several more, at a time when they proved especially interesting to me. Being aware that a number of cases have been observed by members of this society, my desire is to elicit their views and experience with the disease, and become thoroughly acquainted with it.

The first authentic record of ex-ophthalmic goitre was discovered by S. Wickham Legg, in St. Bartholomew's reports, in which Caleb Hiller Parry of England describes a case in 1786. Latterly we have descriptions by Flajarni in 1802, and Demours in 1818. In 1835, Graves, of England, published an account of these cases, and in 1840 Von Basedow, of Germany, gave an account of the disease. The Germans named it after Basedow, and the French after Graves. After studying some of the many theories advanced as the causation of this affection, we are only impressed with the mystery with which its ætiology is surrounded. Nevertheless, I think it would be proper and perhaps of some interest to give some of them, and if possible the more recent ones. An inherited nervous temperament undoubtedly predisposes to this diseases, as well as to all neuroses. And I think under the ætiology we may consider of importance *heredity*. In one of my cases the family history was affirmative in this respect. The mother

had ex-ophthalmic goitre, and previously she had always been quite nervous, as well as her brothers and sisters. One of her children had defective speech, and a daughter, about 16 years of age, had tachycardia, and other manifestations of a weakened nervous system. In referring to the authorities in this connection, Dr. Curtin of Philadelphia, in his investigation supporting this view, reports much interesting evidence. In one family three sisters, the only children, aged six, ten and twelve respectively, had unmistakable signs of this disorder. Their mother had palpitation and enlarged thyroid at eight years, and her sister the same sympton at 22, making five cases in this family that presumably were affected by the same disease. He cites a great many cases from other physicians. Among them Dr. H. C. Wood, and J. Madison Taylor, of Philadelphia, and Dr. Guthrie, of this city. Dr. Frankel gives an account of a patient in whom evidences of heredity were extremely marked. The patient, a woman aged 40, had ex-ophthalmus, tachycardia, struma, tremor of the hands, severe diarrhœa and premature occurrence of the menopause. The father and sister of the patient had well marked ex-ophthalmic goitre and two of the children had died of severe mental trouble.

Women are affected much oftener than men. I think we can estimate the proportion from statistics at about twelve per cent men. Climate is undoubtedly an important factor. Curtin, in his observations, has noticed the large proportion of Germans and French, and their descendants, visiting the University of Pennsylvania dispensary, affected with this disease. These Germans and French were almost all from the provinces of Alsace and Loraine, and many of the cases of the disease of persons born in the United States were of those whose ancestors were German or French from these same districts. It has been found that the atmosphere of elevated situations has a decided effect on the disease. A mountain residence for developed cases, or even for persons who have only a hereditary tendency, is not the best. Observations favor the argument that lowlands are better for patients with this disease. It may occur at any age, from 2 to 60, but mainly from 20 to 40. Ehrlich in a study of the subject has discovered 19 cases,

Kronthal 4, and with other writers, making a total of 26 reported cases in children. Delicately built, hysterical women are particularly liable; also chlorotic and anæmic persons. Disorders of menstruation are found very often in the female patients. In mild cases the disease and symptons are known to have disappeared when menstruation became regular. Exciting causes are exhausting influences, mental excitement and injuries, worry and fright. Dr. Henry Day, in *The Lancet*, claims the cause to be emotional and the excitement of the nervous system carried to a pitch beyond what is natural or healthy, will lead to disorder to one or more parts. He says the disease may begin suddenly or may have prodromata, such as feelings of languor and malassimilation.

There is a case recorded where all the symptoms appeared in one night. The three most characterteristic symptoms usually appear in the order named:

1. Palpitation or rapid beating of the heart.
2. Enlargement of the thyroid gland.
3. Protrusion of the eyes.

Cases can go on without these three cardinal symptoms being developed. Dusch observed the cardiac phenomena absent about three times and goitre four times.

Hammond, in his work on nervous diseases, lays great stress on a fourth symptom, first discovered by Louis Fisk Brown, of New York, and consists in a gradual and steady decline in the expansion of the chest in forced inspiration. Prognosis can be somewhat determined by this symptom. The less the expansion the graver the disease. Pigmentation of skin is present to greater or less extent in all cases of ex-ophthalmic goitre. It is attributed to the influence of the sympathetic system. In the three cases in my experience this symptom was very marked, and one especially presented the appearance of a mulatto. Since recovery her complexion is very fair. Sometimes the pigmentation is confined to certain areas, around the eyeballs, nipples and abdomen. Drummond reports a case of such intense coloration as to be mistaken for Addison's disease. The heart generally presents the first symptom, beginning with attacks of palpitation, increasing in

frequency, until it often reaches a steady pulsation of 150 to 175, or so rapid that it is impossible to count. The beat in the carotids is very prominent, and in fully developed cases the stomach and abdomen beating synchronously with the heart. The pulse is rapid and small. Heart nearly always upon auscultation presents a systolic murmur, some hypertrophy and dilatation present.

Thyroid gland—one lobe is usually larger than the other. At first the gland is soft and elastic to the touch, and becomes firmer and harder as the disease progresses. Pulsating and vibrating movements are felt over the gland, and upon auscultation we usually have a continuous humming intensified at each systole of the heart. A peculiar *bruit* is heard over the gland. The protrusion of the eyeballs is nearly always bilateral. In marked cases of ex-ophthalmic goitre there is a peculiar staring expression to the countenance. Another symptom first discovered by Von Graefe, may sometimes be one of the earliest signs of the disease, and consequently of much diagnostic value, *viz.*, when lowering the eye, the lid does not follow correspondingly, and this abnormal condition gives rise to serious changes in the eyeball. It is the function of the lids to cover the globe with tears and to cleanse it of foreign bodies. This function being impaired dryness, inflammation and ulceration of sclera are apt to develope. Ophthalmoscope shows dilatation and sinuosity of retinal veins, hyperæmia of smaller vessels of retina. Becker has observed pulsations of retinal arteries. Marie, in particular, has lately called attention to a peculiar tremor which affects the whole body or the extremities alone. It shows at times remissions and exacerbations and may become so violent that there are spasmodic twitchings in the extremities and muscles of the face. Some more of the nervous symptoms are headache, vertigo, weakness of memory and sleeplessness; anxiety and haste in all movements in speaking, etc. Noticeable when visiting patients, they become very excited, pulse beats more rapidly, and unable to express themselves for a few seconds. The expression of face is that of astonishment. Psychical condition is peculiar, the patients are remarkably

cheerful despite their unhappy condition; a slight elevation of temperature generally, with a sensation of warmth and a desire to get near a window; profuse vomiting and diarrhœa nearly always present in severe cases; the diarrhœa is paroxysmal in character, sometimes it will disappear for days and return. Some have an antipathy for food, while in others there is an abnormal appetite likely due to disturbance of ennervation.

The following is the case of Mrs. K., aged 41, born in Germany, married, six children, always had fairly good health until May, 1892. She was being continually angered by a quarrelsome neighbor, and often became excited. She began to have palpitation of the heart, the intervals gradually becoming shorter. He neck seemed fuller and her collars were getting too small; swelling of glands became noticeable. Her eyes became prominent, and her friends would remark about her wild look; sensation of warmth; perspired freely; upon slightest exertion, would feel fatigued and nervous; symptons continued getting worse. When I saw her about four months after first indication of the disease she was emaciated and exhausted. Vomiting and diarrhœa were profuse; cramps in the stomach; heart, carotids and abdominal aorta were beating very strongly; heart beats about 155. The symptoms gradually became milder, and patient, to all appearances, was improving nicely. Had not seen her for about three months, when I was again called. Dropsy had developed in the meantime, and the symptoms of ex-ophthalmic goitre had almost disappeared. The case finally ended in recovery.

Another case: Mrs. W., aged about 34; born in Wales; all symptoms quite as pronounced as previous case. Had been an exceptionally healthy woman until her husband was brought home severely burned in the mines. She began to have palpitation, the attacks became more frequent and the other symptoms of ex-ophthalmic goitre gradually developed. Did not respond to treatment as rapidly as first case. Typhoid fever developed, and at about the third week of the fever dropsy set in. The symptoms of ex-ophthalmic goitre abated in this case somewhat. She was convalescing I thought, and about the fifth week while she was sitting on a sofa, she suddenly expired, probably from heart failure, due to the preexisting Graves' disease. I had some difficulty in making the diagnosis of typhoid fever for some days on account of the diarrhœa and slight elevation of temperature being nearly always present in ex-ophthalmic goitre.

3d. Mrs. G., aged 28; born in this country of German parentage; had been married about nine months when I first saw her. The first signs of any trouble commenced about three months after she was married, beginning with extreme nervousness and palpitation of the heart. The symptoms of ex-ophthalmic goitre gradually developed, and when she consulted me she presented a most pronounced case. This patient recovered also. Osler says the course of the disease is usually chronic, very often ending in recovery, except in very severe case.

*Pathology*—The nature of the disease cannot be inferred with certainty from the anatomical changes. The heart has often been found hypertrophied, fatty degeneration and inflammatory changes in the endocardium.

*Thyroid Gland*—Aneurismal dilatation and abnormal sinuosity of the arteries, and varicose dilatation of the veins; calcification and cyst formation are generally of older date. Ex-ophthalmus is less prominent after death. This must be explained on the theory that the symptoms are owing first to distension of retro-bulbar vessels and serous infiltration of the orbital adipose tissue.

*Nervous System*—Gogle observed that the central canal of the spinal cord was totally obliterated. Abundant development of fat in the interstitial tissue. Hal White has found punctiform hemorrhages visible to the naked eye in the floor of the fourth ventricle. In support of the possibility of this part of the nervous system being the seat of disease in ex-ophthalmic goitre is the frequency with which diabetes has a family relation to Graves' disease.

*The Pathological solution of Graves' disease*—The theory put forward by Sattler is definite, capable of satisfactorily explaining the principal symptoms, and is also corroborated by experiments of Filehue. Sattler assumes a lesion of the centre which presides over the vaso-motor nerves of the thyroid gland and of the intra-orbital tissues. The cardiac phenomena he ascribes to a lesion of the cardio-inhibitory centres of the vagus. Filehne concludes that the restiform bodies are the points traversed by the nerve paths concerned. By dividing the anterior fourth of the restiform bodies Filehne has succeeded in producing ex-ophthalmus. In some other

experiments he also caused enlargement of the thyroid gland, and in one case all the spmptoms of ex-ophthalmic goitre appeared. Dr. W. H. Thompson, of New York, considers that a paralytic lesion involving the common nucleus of the glosso-pharyngeal, vagus, and spinal accessory nerves, and extending to the neighboring center in the medulla, would account for the whole group of symptoms that make up the disease.

With the slight knowledge about the cause and pathology, it would be impossible to outline any course of treatment, more than that it should be symptomatic and on general principles, directing the treatment especially to the heart and nervous system. Hygienic treatment is of vital importance in the disease. Climate should also be considered. The removal of patient from the surroundings with which the affection may have been favored; careful attention to diet, especially on account of the continued weak state of the digestive functions; rest in bed if possible; relieving the pain accompanying the ex-ophthalmus by tying a bandage over the eyes; attending to such details as will soothe and comfort a very nervous and sensitive person. Cold applications to the heart are beneficial in relieving the distressing sympton.

The medicinal treatment should be directed to general building up of the system and remedies directed to control the action of the heart. Strophanthus has received high commendation for this purpose. Rockwell, of New York, says there is very often enfeeblement of the myocardium, and digitalis in many cases is useful in slowing the rapid systole associated with it. The condition of the heart thus becomes improved by the physological rest it obtains through prolongation of diastole. While strophanthus and digitalis both tend to lengthen the interval between the contractions of the heart, strophanthus is supposed to contract the calibre of the arterioles in less degree than digitalis, and is to be preferred as not increasing the work of the heart to the same degree as digitalis.

A combination of these drugs possesses undoubted value. The bromides, ergot, iron, arsenic, belladonna, are of great benefit. Electricity has many firm supporters. Rockwell, in

an elaborate article in the *Medical Record*, 1893, describes many cases where this method of treatment was carried out with splendid results. Dr. Ayres, of Pittsburg, reports much success in the use of sheep's thyroids, as also Owen, of England, and many others; while many writers fail to find any virtue in it. Dr. Frederick Peterson reports a case cured by thyroidectomy. Improvement began immediately after the operation, and ended in good recovery.

J. Arthur Booth reports two cases treated by thyroidectomy. He says cases of Grave's disease can be entirely cured by operation. How this came about was not clear, yet it might possibly be in one of three ways—a diminution of functional activity of the gland substance, a relief of stretching and irritation of the sympathetic nerve fibres; or, finally, the removal of pressure. With the comparatively few successful cases where extirpation has been done, I do not think that we should yet adopt indiscriminate operation for this disease, but where the gland assumes such proportions as to cause pressure upon surrounding parts, when this enlargement consists especially of increased connective tissue, an operation to relieve those symptoms would, I think, be advisable. Many favorable results, I believe, can be obtained by pursuing a careful, symtomatic course of treatment.

## DISCUSSION.

DR. E. C. WAGNER.—Vegeroux and others attach some importance to the lessened conductibility of the skin to the galvanic current whether due to pigmentation or hyperidrosis. Some of the diagnostic symptoms, when the cardinal trio is absent, are the pulsation of conjunctival blood vessels; also, the beginning of von Graefe's symptom due to contraction of unstriated muscular fibres of the upper lid.

I have seen the galvanic current used with good effect in the following manner: Anode over vertebra prominens; kathode in auriculo maxillary fossa, or over ex-ophthalmus, or over thryroid. Another method is placing anode over heart and the kathode over upper part of the left lung.

DR. J. I. ROE.—I have been much interested in this disease, and have observed one well marked cure in which there were present the rapid heart action and protrusion of the eye balls, but in which there was not the slightest enlargement of the thyroid. In the treatment it is important to be sure of the quality of the drug used. In one case I failed to get any

result from large doses of strophanthus. Later I specified the special preparation that I desired, and got the desired effect at once. The use of galvanism I consider very valuable, and of all the means at our command deem it the most important.

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DR. LONG presented a patient from the Hospital with a growth back of the larynx. The patient had been troubled with dysphagia for a long time, and when admitted to the Hospital in February last weighed only 90 pounds. Patient had recently been hypnotized several times, and was now improving and weighs 140 pounds. Dr. Mengel, Resident Physician, was present and hypnotized the patient before the society, giving a very interesting exhibition.

DR. JOHNSON reported a case recently seen by him in Washington, in which a patient had been hypnotized to have teeth extracted, which was done without pain.

DR. LONG asked the sense of the society as to how far we are justified in using hypnotism in practice.

DR. L. H. TAYLOR spoke of the vast amount of literature on this subject, and stated that in the kingdom of Belgium hypnotism is prohibited by law. This is one indication of the drift of opinion on this subject. At the recent meeting of the American Medical Association a whole session in the section of Neurology was devoted to this subject, the general trend of the discussion being in favor of hypnotism as a legitimate field for the exercise of the physician's power within proper bounds.

DR. FELL exhibited a large specimen of uterine fibroid which he had recently removed from a patient at the Hospital. The tumor was intra mural, and removed with great difficulty on account of its great size.

## MEDICAL SOCIETY MEETING, JUNE 19, 1895.

The essayist was unavoidably detained and no paper was read. Drs. Guthrie and Howell reported verbally for the delegation attending the meeting of the American Medical Association held last month at Baltimore, Md., and Dr. L. H. Taylor gave a verbal report of the Pennsylvania State Medical Society meeting at Chambersburg, Pa.

Dr. James, president, reported the post mortem examination of the boy Mertz, of Ashley (case discussed at meeting of May 1, 1895), who had lived nine weeks with a bullet in his brain. The ball had entered above the left eye, passed entirely through the brain and was found at the back part of the head, still in the brain substance but lying very close to the membranes. Two distinct collections of pus were also found in the brain, the larger being at the posterior part where the ball was found.

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## HEADACHE FROM OPTICAL DEFECTS.

DR. G. T. MATLACK, JULY 3, 1895.

The paper by Dr. S. Weir Mitchell during the year 1874, calling the attention of the medical profession to this form of headache, seems to be the first one of its kind from the side of the general practitioner. I do not propose to add anything new to the ophthalmic surgeon's knowledge, but my experience as a general practitioner has taught me that I was for some time not fully alive to the necessity of paying attention to the eye in some severe and protracted forms of headache, since many of these cases have been entirely relieved by correcting the eye trouble and the majority of them never suspected that the eyes were at fault. In looking through text books on the eye and works on headache you see very little mention made to study the eye in headache and even in the classification of the different forms of headache, and this class is as frequent as any form we see, it takes a silent place.

The "conclusions as to headache from eye strain," as formulated by Dr. Weir Mitchell, I will quote:

"1. That there are many headaches which are due directly to disorder of the refractive or accomodative apparatus of the eyes.

"2. That in some instances the brain symptom is often the most prominent and sometimes the sole prominent symptom of the eye troubles, so that while there may be no pain or sense of fatigue in the eye, the strain with which it is used may be interpreted solely by occipital or frontal headache.

"3. That the long continuance of eye trouble may be the unsuspected source of insomnia, vertigo, nausea and general failure of health.

"4. That in many cases the eye trouble becomes suddenly mischievous, owing to some failure of the general health or to increased sensitiveness of brain from moral or mental causes."

This is a most valuable contribution to our knowledge, and so far as I can learn there was no practical knowledge among the profession, either in Europe or here in 1862 or much later, as to the frequency of optical defects in causing headache. No general physician then sent headache cases to the ophthalmothologist, and Dr. Weir Mitchell's paper in April, 1876, is first contribution of importance on this subject.

There was a paper in the New York *Medical Journal*, June, 1877, by Dr. George Stevens. It deals chiefly with the question of heredity in connection with faulty refraction of the eyes and other matters. One of the earliest distinct papers on the subject of astigmatism as causing headache was written by Dr. William Thompson in 1879. The literature prior to this time must have been scarce, as will be noted by a reference to the American Medical Library Catalogue.

In support of the propositions already quoted and of my own views in the matter I will briefly give a few of the cases that have come under my notice:

Case 1. Mrs. C. aet, 24 years; general good health; consulted me in February, 1891, for headaches of about three years' standing; being neuralgic in character and affecting the supraorbital and occipital regions principally, and was accom-

panied with nausea and dizziness and was not relieved by any treatment. After failing to give her but temporary relief I suspected the eyes were at fault and advised her to see an ophthalmothologist and directed her to Dr. L. H. Taylor. My tardiness in grasping the cause of her headache occasioned her a good deal of suffering, although I was aware of this form of headache. Drs. Taylor and Buckman kindly give me following report:

"Mrs. C., Miners' Mills; came February 23, 1891, on account of headaches more than two or three years; measles five years ago and eyes worse since; much giddiness and has double vision; is stout, but health not robust; one child, five years old; no abortions; ophthalmoscope, hyperopia in each; Advised atropia and correction." A test of her vision and the power of glass prism she takes is also given, but that part of the reports I will omit. Her vision was normal and she took a very weak cylinder glass. The last time I saw her was on July 10, 1892, and she had had no headaches or nausea since wearing the glasses. Can sew and read without any fear of headache, and said that she had been entirely relieved without any other treatment.

Case 2—Mrs. T., aet. 29; general health is not good, although suffering from no particular disease except headache, for which she consulted me November 1, 1894. She has mitral regurgitation, but it is not causing her any trouble. Has always been subject to headache, but for about five weeks before coming to me it has been almost continuous, severe in character, and affecting the vertical and parietal portion of the head. Treatment was very unsatisfactory in this case. She stood the coal tar derivatives badly and they were the only thing that afforded her temporary relief. Suspecting eye lesion I advised her to consult Dr. Taylor. The following is his report:

"Mrs. T., aet. 29; came November 14, 1894, on account of headache for two months steadily, but always subject to it; vision was fair; used homatropin and ordered glasses; February 25, 1895, no headache since getting glasses." I saw this patient June 21, 1895, and she says she has been free from headache entirely since getting glasses up to about the 1st of June, when occasionally she would have a little headache. She is in second month of pregnancy, which no doubt accounts for this."

This proved to be a very instructive case to me, and when I advised her to see Dr. Taylor I did not think that all of her

trouble came from an eye lesion, but such proved to be the case, as she was relieved without other treatment.

Case 3—Mrs. H., aet. 31; of fair general health, but not strong; has been having headache for three years following a normal childbirth. She had a slight laceration of the cervix at that time. The headache has been almost continuous and any attempt to read or sew would result in a severe attack of neuralgic pains, affecting principally the supra-orbital region and the side of the head. The pain would alternate occasionally from one side of the face to the other. The worst attacks appeared to occur a day before and a few days after the menstrual periods. The pain for the last two or three months had been much more severe than usual, and would last from two to three days. Large doses of morphia and atropia was the only thing that gave her anything like partial relief. She had other remedies usually prescribed for headache in the house, which she would take between the attacks, with some relief, but they had no effect on these attacks. Suspecting the eyes, I advised her to see Drs. Taylor and Buckman, which she did, and the following is their report:

"Mrs. H., aet. 31; came February 23, 1895; has had headache for years, but worse the past few months; cannot read or sew at all on account of pain in the head and dimness of sight; will use homatropin. February 28, 1895; has had no headache since using mydriatic and had not been free from it before that for months. The vision in one eye was normal, the other fair. She was corrected with a weak cylinder glass. March 21, 1895, has had no headache since getting glasses; eyes are perfectly comfortable."

I saw her June 29th, and she says she can read or sew or use her eyes in any way without fear of headache, as long as she wears the glasses. Once in a while, at the menstrual period, she has a slight pain in the head, and, as she says, it is scarcely worth mentioning. This I believe to be a very unsual case, being one of simple hyperopic astigmatism, and causing such localized neuralgic pain.

Case 4—Mrs. S. Balt, No. 3, aet. 40; a well-built German woman; good general health until about three years ago, when she noticed she was having a continuous headache, which gradually grew worse. She could not sew or use the eyes for any length of time without the most excrutiating pain over the eyes and the top of the head. I was called to see her the 16th

of March last for one of these attacks. The remedies for headache only gave her partial relief, and part of the time had no effect upon the pain, as she would remain in bed a day or two at a time with intense pain. Upon questioning her about her sight, she said she had no trouble in that respect. As she was getting no relief I advised her to have her eyes examined. She saw Dr. Taylor, and this is his report:

" Mrs. S., aet. 40; came April 9, 1895, on account of headache, which she has had for a long time; lids are rough; used homotropin, and she was fitted with glasses.

"April 26, 1895. No headache at all since wearing glasses."

Case 5—A married lady about 32 years old, of fair general health, but not strong, and of very nervous temperament; has been annoyed a long time with headache, which prevents her from reading or sewing or attending places of amusement without severe pain in the head, which interferes with her sleep and affects her health generally. The pain involves the whole top of the head. Remedies for headache, and especially phenacetine, gave her some relief at the time, but it was necessary to continue its use to be free from pain. When reference was made to the eyes as being the possible cause, she was positive they were not, as she could see perfectly and they never gave her any trouble. She at last consented to see an ophthalmologoist, and Drs. Taylor and Buchman gave the following report:

"Mrs. M., aged 32; came November 3, 1894; has headache all the time; was sent to see if she needs glasses; has been troubled for a year or more; used homatropin and fitted with glasses." She has been entirely relieved from headache since getting glasses. This patient can read or sew and use the eyes continually without headache, and has taken no other treatment.

These briefly told cases are a few of the number of cases that Drs. Taylor and Buckman have refracted for me. They have been to me in all ways instructive, as illustrating the majority of the main points at least in headaches due to eye trouble, and some of them have proven that the eyes may long rest unsuspected as the cause of headache, and in but very few of all the cases seen did they complain of their sight when questioned.

The methods of learning if these were astigmatic or accommodative disorders was facilitated by the little test disks given

us by Dr. William Thompson, which I believe can be relied upon. A clear account of it is given in the *American Journal of Medical Sciences*, January and October, 1870. The physicians who are out of the reach of the ophthalmologist might with advantage learn how to use this little apparatus. The complex nature of head pain must affect such a thing as exactitude in diagnosis, with the many immediate and remote causing factors, and a careful study would often tell you that a man may have two or three forms of headache, and while it is well to understand that glasses may cure a frontal headache, for instance, he may still continue to have neuralgia of the side of the head or an occasional headache from other causes. I believe that without an examination of the eyes that no one can feel sure that a headache that has a tendency to persist may not be due to the organs of vision.

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## THE SUMMER DISEASES OF CHILDHOOD.

BY DR. G. W. GUTHRIE, WILKES-BARRE, PA.,
MIDSUMMER MEETING, DALLAS, PA.,
AUGUST 7, 1895.

The summer diseases of childhood are essentially diarrhœal diseases, the principal of which are cholera infantum, entero-colitis, and dysentery; or, as some writers designate them, acute milk infection, sub-acute milk infection, and dysentery. I am inclined to take exception to the latter classification, especially as to the terms acute and sub-acute milk infection. I am not inclined to believe that food alone is the cause of these diseases. Children fed on milk from a bottle, it is true, are most generally affected; but children thus fed are not made ill except during the hot months of summer, say July and August. "But," say the advocates of this theory, "milk during hot weather is more easily affected by germ influences than during cold weather." But I think it is a matter of common observation that children in the country are not nearly so apt to be infected even though the temperature equal that

of the city, and we often observe an instantaneous improvement in the child just as soon as it is taken from the city to the country. It strikes me that there is something more required than artificial food and heat to account for the great prevalence and alarming fatality of these diseases during the hot months of the city.

Let me instance a case falling under my observation. A baby boy of four months—one of the most perfect specimens I ever saw—having a young, perfectly healthy mother, who nursed him, and nursed him exclusively, was perfectly well on a morning of a day early in July last; lying in his crib, kicking up his heels, and crowing and "gooing" to his heart's content. The weather was excessively hot, and had been for about a week. The family lived in the city, on the corner of two streets unprotected by the shade of trees. Towards evening of the day mentioned he suddenly became ill—temperature 103-4, head hot, muscles jerky, and delirious, nausea and vomiting considerable, but not so marked as the diarrhœa which set in, attended with 30 stools during the first 24 hours. His mother had not transgressed any known law of health—living her quiet, uneventful life, as to food, rest, and the ordinary duties of her household. What should have made this boy sick? Certainly it was not a case of milk infection, either acute or sub-acute. Heat, no doubt, was a factor, but it was not heat exhaustion, as the result will show.

Does it not seem much more plausible that the vitiated deozonized air of the city, heated way up in the nineties, so affected his nerve centres as to cause an arrest of the digestive functions and to admit of the formation of ptomaines, and that these poisons did the damage? Fortunately for the little man, a change in the temperature came during the evening of the second day. He had judicious management. His food was withdrawn, his rectum and colon freely and thoroughly irrigated with a solution of bicarbonate of sodium, one grain to the ounce, a mixture containing sodium salicylate given him, and on the fourth day he was taken to the country, where he has been ever since, and remains perfectly well—bigger and happier and prettier than ever.

But I must be brief. One word as to the importance of reducing the body temperature of children suffering from these diseases of the heated term. Between two and three weeks ago I was called to see a child who had suffered almost the entire summer from entero-colitis. His body was very hot, and the axillary temperature registered 108. The nervous symptoms were very suggestive of a convulsive seizure. Fortunately an efficient trained nurse was at hand; the child was immediately put into a bath, lukewarm, and the water cooled to 75 and 80. He remained in the water from 10 to 15 minutes, when the nurse found the axillary temperature 98. This, however, was hardly to be taken as his actual temperature, as the surface was cooled by contact with the water, but the boy was much benefited; he did not die, and still lives, though not fully recovered.

Some question might arise in the minds of some as to the correctness of my thermometer. To this I reply, that only the day before taking the temperature I was called to see a patient, in consultation, suffering from eclampsia, probably uræmic, following an attack of dysentery. My thermometer registered 107. My colleague, somewhat surprised, and, probably, somewhat skeptical, applied his own thermometer to the other axilla, and he found it register the same degree, 107.

As to treatment. What has been said above indicates, in a general way, what I most depend upon—change of air from the city to the country where this is possible; a withdrawal of food, thorough washing out of the colon and rectum, and the stomach also, if necessary; the cool bath when the temperature is up; the judicious use of medicines, principally bismuth, sodium salicylate, and opium when required.

# SUMMER DISEASES OF CHILDHOOD.

BY DR. W. H. FAULDS, LUZERNE, PA.,
MIDSUMMER MEETING, HELD AT DALLAS, PA.,
AUGUST 7, 1895.

This time-honored subject, the Summer Diseases of Childhood, seems to have lost none of its interest, and bids fair to retain its hold alike upon physician and laity. As long as there are poverty-stricken parents, ignorant mothers, weakly children, hereditary influences, in short, as long as there are babies to be reared subject to present conditions and environment, so long will the suffering and annual death rate among children from these causes prove an interesting topic for discussion by philanthropists, scientists, physicians and sanitarians.

Every year brings its samples of baby foods, digestive agents, substitutes for mother's milk, anti-ferments, astringents, intestinal antiseptics, along with the periodical discussion by the profession of what seems to be a threadbare topic; so that if any of the papers of to-day shall reveal anything of value that is new, the society may indeed congratulate itself upon its selection of essayists.

So far as I am concerned, I have nothing new to offer, but shall consider the subject from the standpoint of my own experience in the use of means already well known to the profession.

In regard to the etiology of the summer diseases of childhood, an experience of nearly twenty summers in the same locality has led me to believe that, aside from the extreme heat, there is no one factor which contributes so largely to the mortality from these diseases as the misapprehension on the part of the laity as to the necessity for precaution in the use of cows' milk as food for infants. That this misapprehension on the part of parents is almost universal, I am led to believe, from the fact that one rarely meets a mother who seems to have any idea that her infant, or eighteen months old child, may be made seriously ill by the ingestion of too much milk. On the contrary, the majority of mothers whom I meet seem to labor

under the too often fatal error, that milk in some form is the only suitable food under all conditions, and that everything else, including water, should be excluded from the dietary of the sick child. Mothers, as a rule, seem to ignore the fact that climatic conditions influence digestion and assimilation, and that some change in the food is necessary to meet the wants of the system, without overtaxing the stomach and increasing the irritability of the nervous system, which is already being exhausted by the high temperature, humid atmosphere, and other depressing influences of our summer season. They seem to be entirely ignorant of the fact that the majority of children, as well as adults, cannot digest the hard curd of cow's milk, especially during the heated term, and that if many mothers were compelled to take the same quantity of milk in a given time that is sometimes given to a one year old child, they would soon be in equal need of the service of a physician.

Another point seldom considered by them is, that the digestive organs of bottle-fed children are so often overworked or, if you please, worked to their fullest capacity during the winter and cool months of spring, as to handicap them when overtaken by the dangers of hot weather. How often the mother points with pride to her fat babe that is being fed on cow's milk, rich in butterine, during the cold season, little dreaming that she is jeopardizing his chances of passing safely through the hot weather by adhering to a dietary in excess of his real wants.

A not uncommon experience to the writer is to be called to a child that is vomiting large milk curds, has profuse watery diarrhœa, stools offensive, child feverish and thirsty. The mother, alarmed at the condition of her little one, is afraid to give it water for fear of increasing the trouble, and is allowing it to quench its thirst, or rather increase it, with milk, full strength or diluted, as she is accustomed to preparing it. Fortunately for the child, the mother's fear of cholera infantum has prompted her to send for a physician, and, if not too late to counteract the deleterious effects of the decomposing milk curd, one more child is saved from the ignorance of its mother,

and the improper use of what, from some reason, she has been led to regard as an ideal food.

Indeed, so common is an experience like this that it would be safe to say that among a population of over three thousand there is scarcely a child of two years, or under, but some time during the summer months requires the services of a physician for gastro-intestinal trouble, due to overfeeding with cow's milk or some of the substitutes for mother's milk. Many of these, under the advice and care of a physician, recover from the first, and sometimes subsequent attacks, but quite a percentage never rally from the injury done the digestive organs, and sooner or later die from inanition or some inter-current affection of the brain or nervous system.

These are among the so-called cases of cholera infantum, but if their history were carefully inquired into, in nearly every instance the starting point of the trouble could be clearly traced to an attack of acute indigestion and auto-intoxication from cow's milk.

Only a few days ago a twenty months old child was brought to my office suffering from vomiting and diarrhœa, and the mother, in commenting on my instructions as to care in feeding, said: "One would think there is nothing in cow's milk to hurt anything." Another to whom I had previously given directions in regard to its use, said: "I thought cow's milk was just the thing for the baby. When my husband was sick the doctors gave him nothing but milk, and the child's grandmother thinks it very funny that he cannot have all the milk he wants."

In pleasing contrast to this is the educated mother whose whole concern is the proper care of her child. Without waiting for it to get sick, as soon as it is weaned, she seeks the advice of her physician, knowing full well the importance of care in the selection and use of artificial food. The quality and preparation of the milk, or other food, is the object of the most minute investigation. The general condition of the child is the subject of every-day observation; the character of the stools is carefully noted, so that if there is undigested food, or milk curd, the relative proportion of milk and food may be changed,

or the quantity of nourishment given be reduced. If there is fever or excessive thirst, milk is dropped entirely and the bottle filled with pure water; and for several weeks after, weak mutton broth, chicken tea, or nice sweet buttermilk diluted with water, and these in small quantities, is the only nourishment thought of. When the child has sufficiently recovered to take its accustomed food, it is given in smaller quantities and in greater dilutions than formerly. Or at this point it may be thought best to make some change in the preparation of the food. Condensed milk may be substituted for cow's milk, malted milk for Mellin's food, or vice versa, or Nestle's or lactated food substituted. The intelligent mother, always remembering that she is not to be governed entirely by the advice of her neighbors and friends in the selection of a food, she having learned that a child, like an adult, in the matter of nourishment, is a law unto himself, knows that the experience of a dozen mothers or nurses may be of no value to her in this particular instance. She will have learned too, that all the baby foods contain something of value, and that each may be a proper food for a certain proportion of children if used with judgment. But she would as soon think of giving roast beef or boiled cabbage as to continue to give any kind of food, which, after a fair trial, in various proportions, shall pass the bowels undigested.

But, I hear some one say, if improper feeding is so potent a factor in the etiology of summer diseases, why is it that the child of the average country mother is so seldom seriously ill with these diseases? Of course every body knows that other things being equal, children living in the rural districts have greater vitality because of the comparative purity of the air and water. But I believe that a no less important factor is, that for several generations the country mother has taken her own experience as a guide in the care of her children, and is seldom known to give them cow's milk in excess at any age. Most of the mothers will tell you that milk is feverish and it is only within a short time that they could be convinced that milk is a suitable diet in sickness of any kind.

But besides care in diet there are other important things

which engage the attention of the well informed mother. On the hottest days of summer, when the babe is feverish and restless, it is taken to the coolest room in the house and every attention paid to its comfort. Morning and evening, and on cooler days, it is carried into the open air or given a ride in the family carriage or electric car, always being careful to take along sufficient wraps to protect it from strong drafts of air and sudden changes in the weather. During the cool nights of late summer and autumn when chilling of the surface of the body will often bring on an attack of cholera morbus in the adult, the little one is carefully clothed in a suit of light flannel so arranged that should the bed covers be displaced it will not lie naked half of the night or until awakened by the chilling, damp atmosphere of a September morning.

So confident is such a mother of seeing her child safely through this trying season that I have heard more than one of them say that they believed it possible, with proper precautions, to rear any infant of average vitality.

We sometimes hear it said that the weakly children succumb to summer diseases, while the healthy and strong survive under almost any circumstances. This I believe to be a mistake; of course other things being equal, the child of greatest vitality has the best chance of its life, but I am convinced that many a child of less than average constitution lives, because of the intelligent care of its mother, while others of much more than average vitality succumb because of the poverty, ignorance and indifference of its maternal protector.

I would not have you think, gentlemen, that improper feeding and want of care are the sole causes of the summer diseases of childhood, but that they are too often the cause of these, as well as the exciting cause of other diseases of childhood which help to increase the infant morality during our trying summer season, I am fully convinced.

# FERMENTATION.

BY DR. W. G. WEAVER, WILKES-BARRE, PA.

SPOKEN FROM NOTES PREPARED FOR THE MID-SUMMER MEETING, HELD AT DALLAS, PA., AUGUST 7, 1895.

Fermentation is the most potent source of mischief in the production of the summer diseases of children. The organs of digestion of the child, both anatomically and physiologically considered, favor the production of fermentation more than in adult life. The peristalsis considered so valuable to digestion in the adult, amounts to little with the child, while the digestive juices of the infant are not constant or of uniform strength.

The absence of a sufficient amount of acid in the gastric juice is claimed to be a leading cause in the production of bacterial fermentation. Back of this, of course, in the production of the disease under consideration, are the bacteria themselves. If the food ingested were entirely sterile, the fermentation in the gastro-intestinal canal would be avoided. Over feeding is a potent cause of fermentation—giving the stomach more work than the gastric juices are capable of taking care of. The remedy then is:

1. Give no more food than the stomach can easily digest.
2. See that all food ingested is thoroughly sterile.

When the physician is called, however, he usually finds the mischief already done. Both causes, viz, over feeding and bacteria-laden food, have united to produce the condition present. It is more than a diarrhœa that we have to contend with, else why the great prostration which is often witnessed in these cases? This prostration is the result of the ptomaines produced by the bacteria present in the alimentary canal. We must speedily stop this fermentation, or our treatment will be a failure. The bowels should be thoroughly flushed with sterilized water, containing a mild antiseptic; food should be withdrawn, a sufficient quantity of pure water allowed, and an antiseptic treatment by the mouth also given. *Beware of*

*opium* in this condition. It will nearly always do more harm than good, and is likely to cause death.

Among the antiseptics I have found none so satisfactory to me as listerine. I have given it frequently during this summer, and have always been pleased with its action. It should be added to the enema and also used *per orem.*

After the bowels have been thoroughly flushed and an antiseptic treatment used by the mouth, a small quantity of opium may be administered, if the pain is a troublesome feature. As a preventive measure I emphasize the importance of protecting the child from sudden chilling at night. Anything which lowers the vital resistance subjects the child to the dangers of fermentation, and the accompanying shock which results from the absorption of the ptomaines thus developed. A flannel band should be worn at night to prevent the chilling, so likely to occur in the early hours of the morning.

The temperature of the child should be carefully watched. In a case of mine, seen in my absence by Dr. Guthrie, the temperature rose to 109° F. The cold bath is the proper remedy here. It should be used promptly and thoroughly if the life of the little one is to be saved.

If the lesson could be thoroughly inculcated among mothers, that the slightest diarrhœa is ominous, that over-feeding is a potent cause of these ailments, and that the child cries and worries as a result of already undigested food, and its distress will only be aggravated by further feeding; that these cases require the thoughtful ahd investigating care of a physician, instead of the suggestion and experiment of every kindly disposed neighbor, the fatality from the "summer diseases of children" would be greatly lessened.

# THE DIARRHŒAL DISEASES OF CHILDREN.

BY DR. CHARLES P. KNAPP, WYOMING, PA.,
MIDSUMMER MEETING, DALLAS, PA.,
AUGUST 7, 1895.

The clinical picture presented by cases of gastro-intestinal disease with diarrhœa, in children, during the summer months, is three-fold.

1. Cases of gradual onset, with frequent foul-smelling stools containing undigested food, colicky pains and rumbling noises in the abdomen, coated tongue, loss of appetite, slight fever (100° F.) and emaciation—*catarrhal or acute dyspeptic diarrhœa.*

2. Cases of more acute onset, with frequent spinach-like stools, neutral or acid in reaction, vomiting, a painfully distended abdomen, higher fever (101° to 102° F.), pallor, wasting, cutaneous anesthesia, mydriasis, muscular weakness, convulsions, and coma—*entero-colitis.*

3. Cases of sudden onset, with frequent large serous stools alkaline in reaction, vomiting, great thirst, high temperature (103° to 105° F.), rapid pulse, scanty urine, nystagmus, hyperexcitability of the skin and organs of sense, collapse or convulsions, often tetanic in character, como, and death—*cholera infantum.*

A rational and scientific treatment of these cases rests upon their etiology and pathology. I do not intend to deal with the exciting and predisposing or climatic and dietetic causes, or the treatment these causes would suggest; but, taking the three classes of cases above mentioned, and comparing them with a class of cases, of varying degrees of intensity produced in the laboratory, will direct our attention to the treatment suggested by this comparison.

The bacillus coli is the most numerous of the intestinal micro-organisms (I might say, in passing, that the micro-organisms found in the cases above mentioned are usually of the *proteus* variety), the bacterium lactis aerogenes being the one next in order of frequency to the coli. When toxins of

equal virulence of bacillus coli are injected into animals, we have poisoning, producing symptoms of three grades of severity:

1. Muscular weakness, mydriasis, cutaneous anesthesia, and coma.

2. Convulsions, nystagmus, hyper-excitability of the skin and organs of sense.

3. Violent tetanic convulsions.

The toxins of this bacillus in less doses than to produce the phases given above, give nearly all the other symptoms enumerated in the diseases under discussion. This being true of this micro-organism in the laboratory, it is true also of other micro-organisms; and furthermore, Bouchard, Kellogg, Gilbert and others have proved the same true of this and other micro-organisms in the clinical room. We can deduce from this both a reasonable and scientific indication for treatment.

First, then, we must empty the stomach and intestinal canal of its contents of nutrient material and its colonies of toxin-producers; in mild cases, with small doses of calomel or seltzer salt, and in serious and grave cases, by lavage of the stomach and flushing out of the intestines. It would be better to do this in all cases.

We should nourish the child with that which is not a nutrient media for the further production of bacteria.

We should procure a rigid gastro-intestinal asepsis—giving drugs that will inhibit the growth of micro-organisms left after the lavage and irrigation. I have found none to serve the purpose better than bismuth salicylate. We should stimulate the gastro-intestinal cells to a more active metabolism, which will prevent the absorption of both bacteria and their toxins. Arsenite of copper, sulpho-carbonate of zinc, acetate of lead, calomel, and bichloride of mercury, in very small and frequently repeated doses, will accomplish this.

We should increase the defensive action of the cells of the body, by baths and by change of air, both of which increase leucocytosis, and by giving nuclein, a well proved antitoxin.

As a sedative to the correlative action of the cells through the nervous system, and to sustain the nervous system both

against the toxic action of the products of the bacteria and the wear and tear of its own correlative action, we should give strychnine, acetanilid, codeine, or even morphine in very small doses.

This is the course of treatment modern bacteriology and pathology point out in this class of diseases, which are toxæmias; and our present and coming mothers must be taught a nursery hygiene based upon bacteriology.

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## THE HYGIENE AND CARE OF NURSING INFANTS.

BY DR. J. A. SINGER, FORTY FORT, PA.

READ SEPTEMBER 4, 1895.

*Mr. President and Members of the Society* :—As the hygienic surroundings of a child should be looked after as soon as born, we will note the care it should receive at and immediately after birth.

As soon as the child is born it is well to place it on its right side, so as to favor the closure of the faramen ovale, and also leave it near enough to the mother's body nōt to put the cord on a stretch, and probably drag on the placenta. As soon as we have satisfied ourselves that respiration is fully established the cord should be ligated and the child handed to a competent nurse. I say competent, for should the nurse be incompent some serious accident might befall the child while the physician is caring for the mother.

I recall a case I attended about ten years ago, where the nurse placed the child in a corner of the room on the floor, the father came in the room in an intoxicated condition and stepped on the child, injuring it seriously. Since then I have been careful to have the child placed in a safe place.

As soon as the placenta is delivered and the mother is safe the physician should see to the toilet of the child, for who can say that the irritated surface of so many children just newly born is not directly due to a careless nurse? Many times have I seen children, who have been washed several times by

so-called nurses, that were still covered on parts of the body with a sebaceous coating that was on them when born.

In beginning to wash a child the mouth should be cleansed first and the child given a few drops of sweetened water. The head should then be thoroughly cleansed, the body in the meanwhile kept well covered with flannel. After the body is cleansed it is well to give the child a plunge in a basin of warm water of the proper temperature. As soon as this has been done the physician should see that the umbilical cord is properly dressed. As a rule the physician is not consulted regarding the clothes the child is to be dressed in, but we should see that the child is dressed warmly during cold weather and not overburdened with clothing during hot weather. Woolen garments are the best, and give the best protection during sudden changes of temperature, and where fashion calls for fine linen dresses we should see that flannel is worn underneath.

Another great detriment to the hygienic surroundings of a child is the rubber diaper that is so much used to-day. It converts a wet napkin into an unclean fomentation, and certainly does more harm than good, as the child is left go much longer with soiled clothes than it would otherwise.

The band of the infant, kept on by some for months, and enveloping the trunk of the child from the nipples to the illiac, can certainly be of no use after the healing of the navel; it only compresses the ribs, and the abdomen in a healthy child needs no support.

A popular opinion is prevalent that it prevents hernia, but might it not, after all, favor inguinal or femoral hernia instead of preventing it? As soon as the child begins to use its limbs freely it should be put in short clothes, and several times daily a creeping gown should be slipped over its dress and the child then placed on the floor; the gown keeps the dress from impeding its progress and also protects it from drafts. As the child grows older the dress should conform to the same hygienic requirements as in its younger days.

Exercise also is of great importance in the hygienic surroundings of a young child, and most children are better for being

abroad daily to receive the influence of the sun and air. You might as well try to raise a fine foliage plant in your cellar as to try to bring up a fine, healthy child without sunlight. Nevertheless, this is continually overlooked. So many mothers would sooner see their children pale and sickly than to have their cheeks tanned a little by being out in the sun. During cool weather they should be carried in the arms, so they may have the benefit of the warmth that comes from the nurse or mother's body; and in very cold weather the windows of a room that face the sun should be opened until the air is as pure as out of doors; then close all doors and windows and carry the child for awhile, dressed as if out of doors. This cannot fail to give beneficial results to the child. Well cleansed, well dressed, well fed, plenty of open air exercise and sunlight, are all that is needed in caring for a nursing infant. This comprises the hygienic surroundings. Our next step will be to find a suitable food for the child. Undoubtedly the most suitable food for a newly born infant is that which nature has provided; but many will not thrive on that food; and the well-being of an infant will also depend on its environments, such as affluence or poverty, city or country life, and in other cases the mother has no milk for her newly born babe. Then the question comes to the physician, What shall we feed the baby? Our answer at all times should be, Give the baby baby food; discourage the mother who is proud because her baby comes to the table and "eats like a man." Because a baby wants a thing is not sufficient reason that it should have it. And if we expect to have healthy men and women in future generations, it behooves us to look well to the feeding of our nursing infants. Very much happiness in future life depends upon the restraint imposed upon the child during its first year or two of life. Only quite recently did Dr. Matlack read an able paper before this society on "Infant Feeding," that I do not deem it necessary to go into details on this subject, and will therefore only mention what I have noticed in my own practice. If the baby must have artificial food, I prefer Horlick's malted milk above all other foods. There seems to be less danger in giving this; it is easily prepared, and most children relish it; furthermore,

the starchy part has been made quite soluble by super-cooking, and, in addition, diastase has been incorporated to guard against any of this part escaping conversion. Where they insist, as we find they sometimes do, on giving cow's milk, I have them prepare it with barley water, adding a pinch of sugar every time the child is given the bottle. The importance of regular feeding must not be overlooked. In the daytime the child should be given the breast or bottle regularly every two hours during the first month, the interval being gradually increased till at the end of three months it reaches three hours. Under no circumstances whatever should it be given the breast or bottle as often during the night as in the daytime. In sickness we should always *thin* the food; nearly all the digestive disturbances we find in children is caused by something being wrong with the food, and if we *thin* it, or take it away entirely for a day or so, we can save our little patients, and gradually return to the food. We must take in consideration that babies cannot thrive on a purely vegetable diet; they must have animal food of some kind. Nursing babies get it in the mother's milk, which is a perfect food the first year of baby life; and where this is not used, where the baby is raised on the bottle, we can give it a little raw meat juice that has been slightly heated through, seasoned with a little salt, and give a little at a time according to the age and strength of the baby.

This is also useful at times where we have that inflammatory condition of the mucous membranes of bottle-fed babies, due, no doubt, to the undue proliferation of the protoplasmic elements of the parts. In conclusion I will say, that no one food will fill the bill for all babies. If one baby thrives it is no sure guarantee that the next one will. The child must be watched continually, and under ordinary circumstances the majority of nursing infants will thrive if the hygienic rules be carried out and their food is looked after properly.

# ANTITOXINE TREATMENT OF DIPHTHERIA.

REPORT OF CASES BY DR. A. F. DOUGHERTY, ASHLEY, PA.
READ SEPTEMBER 18, 1895.

The following report, meagre and incomplete as it is, derives its importance from its purely clinical nature. From the standpoint of theory we have all heard of the pathognomonic nature of the Klebs-Loeffler bacillus and the curative properties of the antitoxine serum in cases of true diphtheria. To the general practitioner, however, results of careful clinical observations are of more immediate and practical interest. It is also well for all of us to make known results of our experience with remedies which are really in the experimental stage, for it is only when a large number of cases are gathered from private as well as hospital practice that we can arrive at a definite conclusion as to the actual therapeutic value of such remedies. I do not at this time intend to say anything regarding the pathology of diphtheria, a subject which has been so often and ably discussed at previous meetings of this society. I simply intend to give you the results derived in my practice from the use of the serum in a very few cases. The antitoxine was used only in those cases which were malignant from the first or developed sepsis or malignancy as the case progressed. This was necessary on account of the limited means of the families in which the disease occurred. While no bacteriological examination was made in those cases, I haven't the slightest doubt of their being cases of true diphtheria. The serum was used in all cases for its curative qualities, and I can therefore say nothing regarding its prophylactic powers. The serum used in those cases was that prepared by Behring to 1,000 antitoxine normal units. The point selected for injection was either the gluteal or interscapular regions. Each injection was given under strict antiseptic precautions, and in no case was there local trouble at point of entrance.

Case 1. Male, aged two and one-half years; seemed feverish and restless for two or three days; mother noticed sero-

purulent discharge from the nares and evidence of nasal obstruction for some days, but thought he had an ordinary cold in head; temperature 103.5° F.; nares were filled with dense yellowish gray membrane which also coated the uvula and posterior pharyngeal walls. The ordinary treatment for diphtheria, including calomel sublimations, were employed, but the child's condition progressively grew worse. At the end of thirty-six or forty hours the membrane extended into the larynx and the child became cyanosed and croupy. He refused all treatment and fought until he became dangerously cyanosed when given food or medicine. He was given an injection at this time, and no apparent effect being produced, a second about twelve hours later. About three hours later an improvement became noticeable and continued until recovery was complete. Convalescence was complicated by an attack of pharyngeal paralysis.

Case 2. Female, aged eighteen years, nurse in family in which previous case occurred. The mother's attention was devoted exclusively to her children, three of whom were at this time sick; girl was taken with rigors, followed by fever and sore throat; the tonsils and larynx were covered with a grayish membrane which, in some places, was very dark or black; temperature 105° F.; cervical glands very much enlarged and indurated. The ordinary treatment was prescribed, but there being no one to care for her, it was neglected. Her condition grew steadily worse; she became delirious and very much prostrated. At this time she was given an injection of serum. In twenty-four hours her condition had improved wonderfully and she made a perfect recovery, no other treatment being used in the meantime.

Case 3. Female, aged three years. Had always been anæmic and scrofulous and given to nasal hemorrhages. She appeared unwell for a few days, being restless and uneasy. Mother thought a change of air would improve her, and removed her to a distant town. She was taken with a convulsion when she reached there, and a few hours later a second one. A physician was called and discovered diphtheria. The child remained there for treatment for four days, when her removal home was advised. She was taken home, a considerable part of the journey being made on a trolley car on a damp chilly evening. She was in a profoundly septic condition. The nares, fauces and roof of mouth being entirely covered with a dense membrane. She lay in a state of profound prostration and could only be aroused with difficulty. She was given an injection of anti-

toxine at once, and stimulated freely. At the end of twenty-four hours she had improved slightly. The membrane began to disappear from this time and the prostration was not so marked. At the end of forty-eight hours the nares seemed entirely free from membrane, which was also growing less in throat, when she was taken with the profuse nasal hemorrhage and died in about one hour, evidently from acute anæmia.

Case 4. Male, aged five years. Temperature 104.5° F. Tonsils and pharyngeal walls were covered with membrane in abundance. On the second day symptoms of laryngeal obstruction were noticed, which gradually increased despite all treatment. An injection of serum was given on the fourth day. Next day interference with respiration had become very much better, and case progressed to recovery, complicated with ptosis of left eyelid.

The cases cited above are too few to base any opinion upon, but in three of them, at least, the ordinary treatment of diphtheria had been given a very fair trial without any benefit whatever being derived. It was noticed in these cases, as spoken of by others, that its effects in septic conditions was very marked. It was also observed that the general or constitutional symptoms were first relieved, followed a few hours later by a gradual disappearance of the local lesions. No bad effects attributable to the injection were noticed in any case.

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## TREATMENT OF PNEUMONIA.

BY DR. G. A. CLARK, WILKES-BARRE, PA.

READ OCTOBER 2, 1895.

Being one of several requested to present a short paper this evening, I, in point of brevity, at least, will not disappoint you.

I will not attempt to cover much of the subject named for discussion, contenting myself by mentioning a few points in the course and treatment of pneumonia, as they have presented in my practice, leaving the subject in general to be treated more fully, as it doubtless will be, by the abler writers you will have the pleasure of listening to.

We are told by the dominant writers of the day that pneumonia is an infective disease, caused by a specific germ; that it is self-limited, and uninfluenced, in any way, by medicines, and runs a course usually ended in from seven to ten days by a marked crisis. Being useless to attempt to abbreviate or modify the course of the attack, we are taught to watch and wait for the crisis, ready to meet the indications as they arrive.

The theory of infection I do not admit as being proven, and it is a question in my mind whether we have not wandered too far from the line of active treatment formerly in vogue. I have no statistics at hand showing that the pneumonia of to-day is a more fatal disease than that of three to five decades ago, but judging from the articles we read almost daily in the current medical journals, together with newspaper reports, one is forced to the conclusion that it is.

If this is true, what is the cause? The discovery of the pneumococcus has surely not changed the character of the disease. The most potent factor, seems to me, to be the change of treatment. I believe to a certain extent the resistive powers have been lessened. That the habits of living, at present, as compared with those of the past, are, in many cases, at fault, influencing the result.

Is it, however, good treatment to allow *nature* to struggle alone practically unaided? I think not. I firmly believe that very much toward modifying the course of the disease and limiting the extent of the inflammatory process, and consequent exudate, can be done by the early and judicious use of depletory measures, cardiac sedatives, and restricted diet.

Hare says that the circulatory exitement incident to the beginning of an infectious inflammation can be antagonized by the use of sedatives just as the circulatory excitement, due to any cause, can be so influenced, and the result sought for under such eircumstances, is not because of an excited circulation, in itself harmful, but rather that indirectly the vasomotor spasm forces a greater quantity of blood to the hyperæmic area which is "infected."

That veratrum viride is the best vaso-motor depressment at our command, I think all will admit. By its early use I am

confident I have very materially modified the extent of the inflammatory invasion and exudate. Though not the common practice to-day, much can doubtless be gained by general or local blood-letting in properly selected cases. In a full-blooded, healthy adult the abstraction of from sixteen to twenty-four ounces of blood will relieve the pain, the dyspnœa, quiet the nervous symptoms and reduce the temperature.

While there is much prejudice against the early use of blisters I believe it to be a depletive, though slow in action, capable of good, followed by properly applied poultices.

The bowels should be kept open by use of mercurials or salines; opiates given in sufficient amount for relief of pain or excessive cough. Later in the course of the disease stimulants may be required. In strychnia we have probably the best cardiac and respiratory stimulant, and in most cases all that is required. Occasionally the heart will need still further aid. I then give digitalis rather than alcohol. With these few remarks I will leave the subject for general discussion.

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## EARLY OR ABORTIVE TREATMENT OF DISEASE.

BY DR. L. L. ROGERS, KINGSOGN, PA.,
NOVEMBER 6, 1895.

*Mr. President and Members:* While the treatment of diphtheria by antitoxine is occupying the attention of the medical world, you will bear with me if I call your attention to effects I have received from remedies that are not new. I am aware that there is not as much enthusiasm manifested in the reconsideration of old time remedies as there is in the new, especially when the atmosphere is tinted with the phosphorescent light of so many would-be Edward Jenners.

At times there seems a tendency among us as a fraternity to pay little attention to a case of common sore throat, to listen, almost indifferently, to the symptoms which seem to indicate only a common cold with a sore throat thrown in, and not until the little sufferer becomes decidedly worse do we wake to

vigorous action. It is my desire to discuss the early or abortive treatment of diphtheria, to the end that we may more fully appreciate the importance of thoroughly inspecting the throat at the first opportunity and a careful investigation into the slightest symptoms.

I am almost daily impressed with the fact that it is a great mistake, often a fatal one, which we make, in not urging upon parents the necessity of frequent inspection of the throat when diphtheria is prevalent, even if the child makes no complaint.

I have known of cases, as doubtless you all have, where children did not complain of the throat when there had been membrane there for hours, and in one case I remember nearly two days. Hence the importance of examining the throats of children once a day when diphtheria is prevalent.

Parents can thus become confident of the condition of the pharynx and tonsils as well, and as the child gets accustomed to the ordeal the examination may be made with little or no inconvenience to either parent or child. Teaching young children when in health to gargle with water is advisable for reasons that are obvious.

*When* will diphtheria be of rare occurrence? *When* the first symptoms of sore throat, whether it be tonsilitis, pharyngitis or diphtheria, receive a treatment so mild as not to be injurious even to very young children, and applicable to either disease in its early stages, but especially effective in the treatment of the worst, viz., diphtheria. *When* sufficient judicious treatment, commenced at the very onset of the first symptoms, and administered at frequent intervals with great diligence until the disease is under control. *When* the public are sufficiently educated to not think it absurd to isolate a case or to use vigilant treatment until it appears to them, at least, nearly hopeless. *When* the masses learn and comprehend that the most severe and malignant cases often come from being exposed to the mild cases, and each physician must instruct, yes, educate, his patrons in these particulars if we accomplish the results we should attain. *When* boards of health use the authority vested in them for the protection of the public by insisting upon strictly private funerals, forbidding the exposure of the

remains of those dying of diphtheria; also urging upon the family the importance of as early a burial as possible. *When* we can have a person to help the parents who has had some experience in former cases and knows what effect to expect from the different kinds of medicines used, or better still, a professional nurse, where such can possibly be secured.

Of all infectious diseases diphtheria is the most dreaded. If there is one disease more than another, in which we should have positive convictions and courage to act upon them, and act promptly, it is in diphtheria.

Diphtheria is a local disease to a certain point, characterized by a deposit of pseudo-membrane at the seat of infection, and is accompanied by constitutional, and later followed by nervous symptoms, due to the local development of the false membrane.

I have faith in the abortive treatment, when it is a local disease, before *much absorption* has taken place. This, in the most of cases, seems easy to accomplish. There is always a time when a small amount of water will extinguish the largest fires that destroy many lives and much property. So in diphtheria, there is a time when it can be nipped in the bud.

To give rules by which to recognize it at this stage would not be so easy. To distinguish it from pharangitis, laryngitis, or tonsilitis is of great importance, but not so great in the stage of budding. Hence, if we can suggest a treatment applicable to all these diseases at this stage, then the diagnosis is not so important.

You naturally ask: What are the mild remedies so efficient in the early treatment of diphtheria?

First. One tenth grain doses of the mild chloride of mercury every half hour or hour, till free catharsis is secured, from two to four stools each day. To be repeated part or all of the day, each day as necessary, for three or four days, then discontinue it.

Second. Bichloride 1-120 grain, commenced the first, second or third day, as desired, but by commencing very soon there is much less danger of having croup set in, in the later stages. This I give every hour. I am sure to commence it on the first day if the child has red hair.

Lime water (fresh) with acid carbolic gtts. IV to VIII to the pint, used every hour as a spray, a gargle or swallow. Without spraying or gargling, if these be impossible, in one-fourth to one-half dr. doses. If used as a spray the more nearly constant its use the better the results.

Mur. tinct. iron, one or two gtts. to the dram of water, previously boiled and cooled, and give one-fourth to one-half teaspoonful every hour, gargle and swallow.

Potass. chloras, a saturated solution to an adult; one-half the strength to a child two years old.

I give this, one-fourth to one-half teaspoonful, every hour for from two to four days and then discontinue. This I am particular to have dissolved in boiled water. If we dispense these in this way we can rest assured there is no typhoid, Klebs-Loeffler or any other bacilli administered in our medicine, possibly giving the patient the germs of one disease while trying to cure another, when sterilized vehicles are not used. It is needless to say these should be kept in corked bottles.

Give one of these four remedies every fifteen minutes to small children, where they cannot gargle, and nearly as often when they can, for thirty-six to forty-eight hours, not missing a dose. It is the rule that at the expiration of that time the disease will be under control.

Diphtheria shows a tendency to relapse about the third to fifth day. Hence if the exudation is not all gone by that time the results are not nearly so good as if we have succeeded in getting it all off. Externally I recommend a piece of flannel size of half dollar, wet with kerosene oil, applied over the glands at the angle of the jaw and kept there till a fine rash appears, then remove the bandage, which should have been folded narrow under the chin and broad on the head, secured back and front of the crown with a safety pin, and apply cold cream every few minutes for several hours.

I never advise alcoholic stimulants. Why? Because I have had a very small death rate without them, but I do insist on strong concentrated nourishment instead.

Give milk and beef tea as regularly as the medicine after the first free catharsis. One or both every four hours.

Watch the nares; use fumes of the chloride of lime near the patient in several places, adding fresh every hour or two. When the nose becomes attacked, which sometimes it does in the start, I syringe the nose with a solution of sodae borate and chloride, made by dissolving one-fourth dram of the latter to one-half of the former, or about these proportions, to a pint of boiled water.

The cleansing of the anterior and posterior nares should be done effectually every three hours or three times a day as necessary.

Household pets, as cats and dogs, should not be allowed in the apartment where the patient is isolated, as they may carry the infection to the neighbors, in fact all over the community.

Mark out a time table for giving the medicines and the nourishment. Always give nourishment or a drink of anything just before the medicine instead of after it. It makes the medicine come very often, but it is easily understood—one after the other every fifteen minutes. The dose of each of the liquids being the same, about one-fourth to one-half dram. Should we not superintend the fumigation of apartments in order that it be properly and effectually done, that is unless we have some one accustomed to it, or a trained nurse?

The above is a hastily given outline of the early treatment only of one of the contagious diseases, which to my mind is practical, and can and is carried into effect, which my patrons can verify and has been used with good results.

I think I have lost only thirteen or fourteen cases in over fourteen years. I do not say this boastingly. I would not do that, for the next case on the list may be one to succumb. If there is anything in this paper that you can carry into the sick room and utilize, I will be amply repaid for this pleasure.

## DISCUSSION.

DR. STEWART.—As Dr. Rogers has dwelt mainly in his paper on the treatment of diphtheria, it may be of interest to the society to hear my recent experience with antitoxine in this disease. Two weeks ago I was called to a family that had lost one child with croup. I learned that an older child had had diphtheria six weeks before, but the one that died had

no deposit of membrane in the throat, but died in three days from the time croup set in. The case I was called to see had croup, without any deposit of membrane in the throat. From the history before me, I at once concluded I had diphtheria to deal with, and treated my patient accordingly. I advised antitoxine, which was used about forty-eight hours after the croup set in, the child dying about fifteen hours after its use.

Two days after this experience I was called to another case, which was ushered in by convulsions. There was very little deposit of membrane on my first visit, but on the second visit the throat was full. At the end of fifty-two hours I used antitoxine, injecting ten c. c. of Mulford's solution, and in about sixteen hours ten c. c. more. I used locally equal parts of listerine and peroxide of hydrogen to wash the throat, with insufflations of protonuclein. On the second day after the use of antitoxine the membrane became loose and was easily washed away, leaving a clean surface. This patient was convalescing in one week from the time I first saw it. From the fact of it being a severe case, and of the early convalescence, I am inclined to give antitoxine the credit for the cure.

Dr. Collins.—I was called, October 14, 1895, to see Neil C., male, æt. 4. Symptoms, vomiting; pulse, 156; respiration, 44; temperature, 102. Both tonsils and pharynx covered with membrane. I injected 8 c. c. of antitoxine (Mulford's) at 3.45 P. M. October 17, throat clear and continued so. Recovered. On October 18 I injected from 2 to 4 c. c. of antitoxine in each of three remaining children of the family, and no other cases have developed.

Case 2. Mary C., æt. 10; October 19, 1895. Symptoms, vomiting; pulse, 132; temperature, 103.5. Membrane on tonsils and post pharyngeal wall. At 9 A. M. injected 12c. c. antitoxine between scapulæ. October 20, P. 120; T. 100.5; October 21, P. 96; T. normal. Cast of tonsils came away at 6 P. M.; October 22, membrane disappearing; October 23, throat clear. Patient recovered.

In the two cases antitoxine was the main remedy used, the only other treatment being spraying of throat with peroxide of hydrogen, administration of alcohol, and liquid beef peptonoids. In a family of six children a child eight years old was first attacked. Pulse was never above 120 until the eighth day. I used protonuclein, calomel fumigation, swabbed and sprayed throat with peroxide of hydrogen. The child died on the eighth day. Two others developed the disease.

Dr. Richard Taylor.—I have at present under treatment a child two years old in whom I suspected diphtheritic laryngitis. No membrane was noticed on the tonsils or pharynx until the fourth day, when a slight patch was noticed on the right tonsil, which confirmed my suspicion. Treatment—mixture of ammonia muriate, sodii benzoat, etc., powders containing protonuclein gr. 1, papoid, gr. 1; fumigations of five grains of

calomel every two hours; a solution of pepsin grs. XXX to a pint of water, used in a steamer. French brandy, one dram every three hours.

I take exception to Dr. Rogers's paper regarding frequency of administering medicines, viz., every fifteen minutes. I consider chlorate of potash, given internally, to be dangerous, on account of the action of the drug on the kidneys. I consider alcohol a specific in diphtheria. I have seen cases where strong nutriment was given without relieving the dangerous heart symptoms, and when the alcohol was pushed it acted at once, and I believe saved the child by tiding it over the crisis.

DR. WEAVER.—I do not believe in the abortive treatment of disease. I agree with the essayist in the early treatment of diphtheria. While we cannot prevent the disease nor abort it, we can so treat the case by thorough antisepsis as to prevent very much constitutional infection; thus we may keep the case from first to last a local disease. Reverting to the abortive treatment of disease, I wish to say I have had within the last month an exceptional opportunity in the City Hospital to test Woodbridge's abortive treatment of typhoid fever, and I have not seen a particle of good from it. Not one case has been aborted by the treatment, but, on the contrary, the cases have run an exceptionally long course. As to the immunizing properties of antitoxine, we must not forget that diphtheria is a disease which requires personal contact for its production. It is an easy disease to prevent by complete isolation. How can you say, when you have used a so-called immunizing dose of the serum, that you have prevented the disease? The evidence is entirely negative and proves nothing.

DR. BRUNDAGE.—In my experience we find septicæmia already developed when we are called to cases of diphtheria. It is only a question of degree. The whole subject of treatment may be summed up in these words: support the constitution. I have had no results in the so-called specific treatment of diphtheria. We cannot abort something that is already developed, when called to see it. There is one plan of treatment —the expectant one. I believe in meeting the symptoms as they arise. I would be glad to find a specific or an abortive treatment, but cannot comprehend how the words "specific" or "abort" can be considered. If "arrest" is substituted, then I can understand it. To sum up—diphtheria should be classed as to degree of septicæmia. Expectant treatment and prevention by quarantine, isolation and general hygiene.

DR. HAKES—I believe that diphtheria is purely a blood disease, and I have always treated it accordingly. How can you abort it? If you use antitoxine, mercurials or other treatment and the child gets well, it is a cure and in no sense an abortion. Either you have the disease to deal with or you have it not, and if already developed it cannot be aborted, but it may be cured.

DR. KNAPP—The specific or abortive treatment of disease has a

rather different signification now than formerly, because we have a better knowledge of the causes of disease now than formerly. We are pretty well agreed that we have a contagium vivum, or a toxin, therefore an abortive treatment would mean a limiting or killing (?) of the local contagium on the one hand, and an antidoting of the toxin on the other. This we do with our local applications, and the administration of a remedy, either to neutralize the poison direct, or help nature do it; the latter is from recent researches, the most likely course to pursue, and this is the manner in which antitoxin and nuclein act, and I believe the explanation of the manner in which small doses of mercury and some other remedies act.

Contagion and infection will mean later on the manner in which the contagium vivum propagates.

The false position that Woodbridge takes in his abortive treatment of typhoid fever, is that he does not fully understand the manner of the production of the disease. He applies his remedies to the local trouble, and does nothing to counteract the toxæmia of the disease.

DR. ROGERS, in closing—I do not wish to be understood to say that I never use stronger doses of the remedies mentioned or other remedies; often these are given a fair trial for thirty-six to forty-eight hours. I have used most of the remedies in common use for diphtheria in the later stages with results as others of you have had from the same remedies, excepting the antitoxine treatment which I have never used. But as this article is limited to the early or abortive treatment, these more powerful doses and other remedies do not come within the province of this paper. By abortive treatment I mean cutting short the usual course of disease. (See Foster's second definition). The bad effect of the chlorate of potash upon the kidneys, I question, if the strength is used as I stated and discontinued on the second to fourth day as deemed advisable in individual cases.

The cleansing of the alimentary canal at the very onset of the disease has a double or treble beneficial effect. The remedies, after having their local effects, are much more readily absorbed, which, I think, increases their constitutional effect equal to larger doses under other circumstances. The stomach is less liable to reject medicines or nourishment in the later stages. The weakness of the medicines favors absorption, as also does the sterilized vehicle compared with the syrup and other vehicles commonly used. The remedies being used singly in my experience augment their effect over their use in combination. Should we not seek to have the conditions under which we use given remedies as favorable as possible? If this is done, small doses will often have a surprising effect. Hence the antiseptic effect applied so nearly constantly to the seat of the disease, dealing death to the Klebs-Loeffler bacillus to an extent which less often repeated doses, even if more powerful, may not accomplish.

The bichloride in my experience approaches toward a specific if used early in diphtheritic croup. I recommend its early use in every case of diphtheria to abort or prevent, croup setting in later. Strychnia, I think, preferable to alcohol to strengthen the heart. The secondary effect of alcohol is depressing, hence the strychnia is preferable.

One of the objects of this paper is to urge upon our patrons the importance of watching their children's throats so that the doctor may be called sooner and have a much better opportunity to cut short the disease.

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## LITHAEMIA.

READ BEFORE THE SOCIETY NOVEMBER 20, 1895,
BY DR. W. LATHROP, MINER'S MILLS, PA.

*Gentlemen*:—Lithaemia, lithuria, uric acid diathesis, lithiasis, and American gout, are, I believe, among the most common complaints of the day; and to this group I ask your attention and discussion. I will take lithaemia, as covering the whole group, and will define it by stating it to be "a complex of symptoms, subjective and objective, found to be associated with an abnormal amount of lithic (or uric) acid, which appearing in the urine, is called lithuria, and the general resulting condition, lithaemia. It is a frequent forerunner of gout, and if not checked is apt to end in contracted kidney." It is a condition in which the products that go to form uric acid, instead of being excreted, remain in great abundance in the blood. In regard to this formation, the oldest opinion is that of Sydenham, who claimed it was the result of certain nervous influences; Murchison attributed it to the liver; when the liver is inactive, oxidation takes place imperfectly, urea is not properly formed, and uric acid, which is produced in great quantities, accumulates in great abundance in the system. It is a well established fact that urea is formed in the liver, to be excreted by the kidneys. In acute yellow atrophy, where the proper structure is destroyed, urea ceases to be produced, and we have excreted leucin and tyrosin. Where we have deficient oxidation, the urea is not properly formed, and instead we have a lower grade of oxidation, and the disintegration of

albuminoid substances results, with the formation of urea. The amount of uric acid excreted daily depends largely on the diet, ranging from half a gramme on a vegetable, to as high as two grammes on an animal diet. Uric acid may occur in traces in the blood in health.

Von Jaksch, after an examination of the blood of 109 individuals, found no trace in a healthy person, but it was present where anæmia co-existed with some gastro-intestinal disorder. According to Haig, the amount in the blood rises and falls with the degree of alkalinity. Minkowski claims it is formed in the liver by the synthesis of ammonia and lactic acid.

Gorrod claims that the kidneys are associated with its formation as well as excretion. Ebstein thinks it is produced chiefly in the muscles and bone marrow. In the urine it occurs chiefly, combined with ammonia and sodium, forming acid urates. Roberts claims that "1, high acidity; 2, poverty in mineral salts; 3, low pigmentation; 4, and high percentage of uric acid are the chief causes of precipitation in the urine. And high acidity is doubtless the chief factor. An excess of urates is not always pathological, but may sometimes be a safety valve; as when albuminoid matters are taken in excess of the power of the system to convert them, or when the oxygen of the blood is deficient from any cause, then urea is not formed but uric acid and urates are abundantly excreted. Krauss maintains that owing to our present imperfect knowledge, it is impossible to define accurately the pathology of the uric acid diathesis.

Herter believes that the pathogenic role of uric acid is greatly exaggerated. The true cause of this accumulation and imperfect excretion is primarily lack of exercise; and again, because people eat more than they can digest, the liver becomes clogged so that nitrogenous matters cannot be gotten rid of. The income is too great for the outgo, and we have accumulation and a morbid product. All large eaters are apt to become lithaemic. The consumption of alcohol is a potent factor. It may also be inherited. We see lithaemic children where lithaemic nervousness has been inherited. Da Costa states that Galton found that out of 80,000 school

children, 14,000 were developing marked nervous symptoms, and he believes that inherited lithaemia is a cause of much of the trouble. As to symptoms, the following description is usually typical of the trouble, and renders a diagnosis comparatively easy. A person, usually about 30 years of age and upwards, complains that while not sick, he seldom feels entirely well; he is dyspeptic, his appetite is variable, he enjoys his food, but after eating he has discomfort; acid eructations, gaseous distension, heartburn, and at times a bad taste in his mouth; he is apt to be constipated; may have hemorrhoids, or intense itching at the anus; sometimes there is eczema, especially about the genitals; mental inertia and drowsiness are common; he is irritable and peevish; he has periods of despondency, and trifles seem to him as matters of great importance. He has headache, often vertigo. Neuralgic attacks are common, especially the intercostal type. There is a general sense of weariness. The tongue is usually coated, the skin muddy, and frequently the seat of a papular eruption. The liver is usually somewhat enlarged and tender; the pulse usually hard and tense. Urine is apt to be high colored and scanty, though often increased. Specific gravity about normal, though sometimes high. Reaction acid, and on standing there is thrown down a reddish or pink deposit of uric acid. The urine is often irritating to the bladder, and there is a sense of weight and pain about the kidneys. Albumen is sometimes found, but not as a rule, and is due to mechanical irritation. Another condition often found in lithaemia is, where the dyspepsia is associated with cardiac palpitation and insomnia. Sometimes cramps attack the lower extremities, and often patients imagine they have spinal trouble. Da Costa states that one of the most significant signs of lithaemic blood is the mental state. The gloom is great, the melancholy keen, and seems more so after a heavy meal, and during its slow digestion it is intense. Some cases of high specific gravity, with albumen, simulate Bright's disease. In distinguishing lithaemia from true gout, we have the usual fact that there are seldom any joint affections in lithaemia, but now and then we may have arthritic trouble, but it is this joint affection that as

a rule makes the distinction possible. We find now and then a case that presents all the symptoms of lithaemia, nervous depression, vertigo, migraine, neuralgia, and imperfect digestion, but we do not find the urine of lithaemia, not a urine abounding in uric acid, or even in oxalates, and not any excess of urea. Would this be called lithaemia? Undoubtedly it would be, and for these reasons, "Lithaemia is not *simply* uric acid formation, it is general disintegration of tissue, and other products similar to those of uric acid, such as peptones, acetone, etc., may accumulate in the blood and be followed by changes that are not yet fully understood, and for want of better knowledge, can be well called lithaemic signs." We have no accurate chemical tests for the quantity of uric acid found in blood and urine, though Haig has estimated the proportion of uric acid to urea in health as 1-33.

Now, in regard to prognosis, the disease is rather remarkable; for in this trouble you can make miserable lives happy; you can apparently pull people from the grave, and it is only necessary to have a distinct idea as to the nature of the trouble. The digestive disturbances are the chief features, and when overcome, it may be said in a general way that a cure is made. The first thing to consider is the diet, and we find no rule applying to all cases. As uric acid is derived chiefly from the nitrogenous elements of food, it would seem to be the indication to stop these as far as possible. But this is not so easy as it seems. Digestion must be perfectly formed, as defective metabolism would cause more trouble than a certain element of food. With most persons, lean meat is more easily digested and assimilated than starchy, fatty or saccharine foods, as with the latter group, if digestion be slow, fermentation takes place, and the resulting acids being taken into the blood derange the nutrition. A diet of albuminous material, with plenty of green vegetables, will be more easily digested and cause much less trouble. Especially is this true where the symptoms develop some time after the meal, giving rise to flatulence, headache and drowsiness, and show that intestinal indigestion is going on and fermentation taking place in the intestinal canal. Where the trouble develops imme-

diately after eating, and shows the stomach at fault, the animal food which makes most demand on the stomach, must be restricted. Frequently a middle course must be taken, and such food as sweetbread, white meat of fowls and fish allowed, while the heavier meats are discarded. Rich, fatty foods, pastry, etc., must be excluded entirely. Stimulants of all kinds should be avoided. In the medical treatment, two things should be recognized as requiring different treatment; the first, where gastric and hepatic derangement is marked, without nervous symptoms. This class as a rule is one of heavy feeders, of plethoric habit, and lead sedentary lives. The second variety, or class, has in addition to the dyspeptic symptoms, evidences of nervousness. This class usually are small eaters, even when well, and under lithaemic influence take but very little food. They are anæmic, weak, and have various nervous troubles, such as insomnia, vertigo, headache, melancholia, etc. In the first class of cases, the salines are extremely useful in the beginning, but should only be given in dose sufficient to produce two or three loose watery movements. It is usually advisable to stimulate the liver moderately by means of mercurials, or podophyllin, but I believe the mineral acids to be the best to use by far, and chief amongst all, the nitro muriatic. Accompanying, or following this treatment, the alkaline or mineral waters are very useful. The Vichy and Carlsbad are much used in Europe, while here the lithia waters are extensively used, and with good effect. We have the Bethesda, Londenderry, Farmville, Hudor, Buffalo and others; my preference being the Buffalo Lithia water. Where the mineral water cannot be conveniently obtained, excellent results are derived by using a simple solution of a carbonate. A favorite plan of Dr. A. H. Smith is to give a teaspoonful of bi-carbonate of soda in a glass of water at bed time, and he claims remarkable results in some cases where headache and general malaise was present. The use of alkalies should be kept up for some time and the urine allowed to be but slightly acid. In cases belonging to the nervous class, the treatment should be varied some. No salines should be used, and only mild laxatives given. Mineral or alkaline

waters should not be pushed to the full extent. It is in these cases that the dilute nitric acid is of great benefit; it should be given in doses of ten to twenty drops before each meal; it is well borne when combined with a bitter tonic, such as Tr. Gentian Comp. Dr. Haig is a great advocate of sodium phosphate, especially where there is much mental depression. Colchicum was long used on its eliminative reputation, but is only of value where the kidneys are unable to throw off the excess of acid, owing to exposure to cold, or alcoholic excesses. It is also apt to irritate the stomach, and will frequently aggravate the gastric symptoms. Lavage has been advocated highly where severe palpitation and obstinate insomnia are present; in these cases it is said to act promptly where the cardiac remedies and bromides have utterly failed. My own experience with these cases, during the past year, has led me to have the greatest faith in, and the best result from, the use of Wyeth's Tablets of Carbonate of Lithia, five grains being given in a glass of water before each meal. I have used more of these than any other remedy, and with the most uniform and pleasing results. Next to these, I believe the mineral acids to be very valuable. I have had no experience with piperazin, lycetol, tartarlithine, or any so-called uric acid solvents, though they may be excellent. Dr. Hare claims that piperazin is of very little value in either case. As lithuria is a condition of imperfect oxidation, it follows that exercise is the *sine qua non*, for plethoric persons; the more they live in the open air the better. On the other hand those of nervous derangement and where the tendency is toward neurasthenia, rest of body and mind is essential, and while fresh air is desirable, it must be taken with the least demand on strength. In this class of cases, the inhalation of oxygen will produce valuable results; this will of necessity produce more urea and less uric acid in the blood. My only excuse for bringing this subject before the society is that I have had a good many cases of lithaemia, and have been struck with the readiness with which it can be relieved when once the diagnosis is made, and the directions followed. I believe a large number of the patients who consult their physicians for "dyspepsia," "indigestion,"

etc., are in reality suffering from lithaemia, and that this can be demonstrated by careful examination, and relieved or cured by treatment directed towards eliminating the uric acid.

I will close by quoting the paragraph in Da Costa's Essay, taken from Maxwell's life of Charles V, showing how lithaemia and gout developed in the great emperor, and showing also how much a man can eat:

"Roger Ascham, standing hard by the imperial table at the feast of Golden Fleece, watched with wonder the emperor's progress through sod beef, roast mutton, and baked hare, after which he fed well of a capon, drinking also the best I ever saw. He had his head in the glass five times as long as any of them and never drank less than a good quart of Rhenish wine. The fullness and frequency of the meals which occurred between his spiced milk in the morning, and his heavy supper at night, so amazed an envoy of Venice that he thought them worthy of special notice in his despatch to the senate. There was a constant demand for eels, anchovies, tunny trout, and olives. He was fond of pickled partridges and sausages, omelettes of sardines and beer, venison, fruit and preserves. His chamberlain goes on to state that "Long trains of mules came laden, as it were, with gout and bile."

## DISCUSSION.

DR. KIRWAN.—In treatment of all lithaemic conditions, I have obtained the very best results by the use of strong nitro-muriatic acid in two to five drop doses in water. It is important that the red, fuming, freshly made acid be used. I also think large draughts of hot water, carbonate of lithic tablets, and exercise in the open air of value.

DR. J. I. ROE.—I heartily endorse what the essayist says of the use of mineral acids. I have had a number of cases which resisted thorough treatment by all the means, but the use of mineral acids quickly and completely cleaned up the uric acid from the urine. This treatment is also very useful in chronic rheumatism, which often accompanies this condition. The use of copious draughts of water is an important adjunct to any treatment which may be carried out in this disease.

# THE NATURE OF INFLAMMATION.

BY DR. HARRY HAKES, WILKES-BARRE, PA.

READ DECEMBER 4, 1895.

There is no abnormal condition of the human system or of its various parts, which calls for the physician's or surgeon's aid so frequently as a condition universally designated *inflammation.* Every organ, every tissue, from centre to circumference, inclusive, inside or outside, this process is liable to invade with grades of danger, ranging from slightly noticed inconvenience and discomfort, to immediately threatning death. How to meet and successfully avert the ultimate or unrestrained, disastrous, or fatal consequences of this inflammatory process has been for ages past, and will be for ages to come, the greatest desideratum of medical art. What is inflammation? I can quote you many specimens of attempted definition, from both ancient and modern authors, but none of us are satisfied with any definition yet formulated. The problem is a difficult one, while increased observation and experiment as yet only push the conclusion we seek into deeper obscurity. Until recent times, it was thought the question was sufficiently answered, by a description of the more manifest symptoms, and a notation of some of the more apparent causes or agencies in producing or inducing inflammatory action. Again, it has been queried, whether inflammation is a disease of the nervous or sanguineous system, and if of the blood, whether it is a general diseased condition, affecting at the same time every atom of the whole body, or only a local condition, say of the eye, and not as to the toes; the fingers, lungs, the brain and not the stomach. Or again, if it is a disease of the nervous system, must it of necessity involve the sum total of the nervous system, or only a part, and a part also not be affected? We need not at this time pretend to enumerate all the theories that have been, or are now entertained. But this much I assert with emphasis, that the practice of any teacher or writer, will guide him largely to formulate a theory, to prove his practice correct. How true this is in regard of the phlogistic theory, and the anti-phlogistic treatment, you can scarcely have failed to

observe. Others, observing the deranged and diminished action of the secretory system, direct their whole line of treatment to increase the secretions, and obtaining some satisfactory result from that treatment, are ready to assert and maintain that the origin and essence of the disease is chargeable to diminished action of the secretory system, and thus show us quite a plausible philosophy. The same, or similar conclusions, are reached by those who direct their attention to the altered conditions of the emunctory system. I presume we should be prepared to witness the same conditions when a microbian origin for inflammation shall be asserted or assumed. And if it so shall be, and another bubble burst, to come and to go, it will be neither the first and probably not the last sad and disappointing experience.

Very early in the history of medical art, four of the more commonly observed symptoms of inflammation, were well known and described by Celsus, to wit: Redness, heat, pain and swelling. Not alone did that old veteran in medical art, assume that in his short statement, he gave a full and sufficient definition of the inflammatory process. It was standard for 1,500 years, and remained quite universally satisfactory, for 250 years after the great discovery of Harvey, as perfected by Boerhaave and his co-laborers. From that period it became easy enough to formulate the phlogistic theory by embodying the four symptoms described so long before by Celsus. Before the discovery by Harvey, of the double office of the heart, the oxygenation of the blood, and casting off the products or refuse of the internal human combustion, it does not seem possible that any reasonable theory for the inflammatory process could have been formulated—that is, reasonable to us, from our knowledge of anatomical and physiological facts. Inflammation for those hundreds of years must, however, have been just what it is to-day, and from the first advent of human beings on the earth. From the ripened fruit of Harvey's discovery soon was hatched and formulated the phlogistic theory, and the anti-phlogistic treatment of inflammation. Understand me, I am not now speaking of inflammation from traumatism, nor from specific causes, as small-pox, erysipelas,

measles, etc., but what has generally been represented or called idiopathic inflammation. Latterly, the term "infective" is proposed in the place and stead of idiopathic. I do not like the change, for the word infective will not express the general fact as well as idiopathic. It is too limited in its application, just as idiopathic is the contrary. I shall have occasion again to speak of this further on. I will now put the case this way. To-day an idividual is in perfect health as far as known. You are called in to-morrow and find him with a pneumonia, phrenitis, nephritis, carditis, bronchitis, gastritis or other *itis*, as you please. We may waive dispute as to idiopathic and infective names, as also for the present, the causes, either probable, possible or real, for that is not the conundrum proposed. What is inflammation? What is its nature? In what, of what, does it essentially consist? Can we discover the nest egg or original factor among all the organs and parts, fluids and solids, or from or among all the various functions? Can we name the place from whence the symptoms arise and proceed? In law, frequently, the grand question is, who struck the first blow, that in the melee terminated in the killing of a man? Not unlike it, is the problem now proposed—what organ, what system, what function first balked or kicked, and thus deranged the whole machine and engendered the state we name inflammation? And again, was the cause from within or without? At a single glance you see it is a case of inflammation. The throbbing heart, the increased rapidity of the sanguineous flow, the rapid respiration, pain, etc., help to make your diagnosis—most certainly the present symptoms were not present at the beginning. By inquiry you learn what you would be pretty safe in assuming to know; that the present symptoms were preceded by a chill or rigor, a sense of coldness; not heat; a feeble pulse, a sense of general contraction, not expansion. The first noticeable symptom, or changed action of the sanguineous system is of diminished and decreased action. The heart beat is feeble, the arteries reduced in size, the pulse beat known as small and wiry. The starting point, so far as we can observe, appears to be a shock to the nervous system, as manifest by the chill. The

reaction from that is the unnatural and increased performance of the sanguineous system, acting, as acting it must in response to the command of nervous influence and excitement. The question forced upon us is this: Does the train of symptoms first inaugurated follow each other in the relation of cause and effect?

It is scarcely to be doubted that the primary or first symptom of the train to follow, is observed as some offence to the nervous system. This is certainly the case as regards inflammation from direct injury or traumatism, nor is it much less certain, as to what we call idiopathic inflammation. Nervous shock and pain from direct injury are too manifest, too often observed and experienced, to require more than mere mention. For sixty years the poor frog, rabbit and dog have been the subjects of endless experiment, for the purpose of throwing some light upon the process and nature of inflammation. To what insignificant beneficial results, medical men as well as laymen can abundantly testify. A frog is not a man, nor is man a rabbit. Should we attempt to mutilate a man as we do the frog, the man would probably manifest some qualities and symptoms which the frog does not.

The volumes written to describe, and the diagrams to illustrate, what takes place in the second and later stages of the inflammatory process, never have, never will, and never can give us the knowledge we so much desire, as to the essential nature and the operations of the first factor in idiopathic inflammation. The greater of these herculean labors and wonderful experiments have been to show us the manner in which the blood substance departs from the congested capillaries. Blood substance, in health, is always passing out of the capillaries for the nourishment and growth of all the tissues and organs. In inflammation, the only difference is that there is a superfluous amount thrown out, which unappropriated by the process of natural requirement, becomes foreign matter, and an offence to the regular and natural performance of healthy function. A blister applied to the cutaneous surface will cause the same material to pass through and out from the capillaries. The fact is everything, the modus is of inferior

consequence. Discoveries subsequent to congestion and effusion are entirely too late to give us correct ideas of the nature of inflammation, or to indicate a theory from whence we may found a preventive or curative practice. If the natural, anatomical, physiological, and psychological conditions of a man and the frog were more nearly alike the expirements would be of much more value.

But what do we observe in idiopathic inflammation? Lassitude, a sense of uneasiness and discomfort more or less manifest, but the chill or rigor is the emphatic indication of the impending inflammation. In fact, it alone is pathognomonic, positive, and unmistakably certain. In the more violent shocks to the nervous system, from whatever cause, the chill or rigor, may be so severe and desperate as to paralyze the sanguineous system to that extent, that reaction does not follow, and death ensues. In such case it is termed death from shock, whether the cause is injury or traumatism, or idiopathic, as from exposure to cold. The ability of the sanguineous system in health, to perform its work efficiently, or in disease, to perform curative work, depends upon its supply of nervous energy. If, therefore, by a severance of the nervous system or its paralysis from toxic cause or chill, the tonicity of the heart and arteries ceases, death is inevitable. Just as certain as that day follows night, is chill followed by an increased activity in the blood circulation, by a sense of increased heat, a more rapid respiration, congestion of the capillaries, exudation of blood substance, with a tendency of the morbid action to some particular vital part or organ. Upon what rule nature makes her selection of organ or region for exudation and possible necrosis, we do not know. Redness, pain, swelling and impaired function give us to understand the part she is selecting or dooming for necrosis. Possibly the effects of the first shock to the nervous system, upon the secretory or emunctory systems, have been too lightly estimated, for it is certain that from the period of chill the secretions are arrested, as also the emunctory function. These, of themselves, must rapidly produce dangerous if not fatal results if protracted.

Our remarks upon the necessity of constant nervous tonic

supply of energy to the whole sanguineous system, applies with equal force to the secretory and emunctory systems or functions. Both the latter must be taken into account in our estimate of the nature of the inflammatory process. The orderly and healthy performance of natural functions in man, is party governed by the laws of physics and chemistry, but not entirely so. Beyond the power of natural vision or our greatest multiple of the same by microscopic aid, beyond our widest range of observation, experiment, or delicacy of test, we are impressed that there is still an unseen power, in constant and efficient operation, which the human mind has hitherto been unable to exactly appreciate, examine, explain or understand, and unable to formulate to a rule. It has been called vital power, vital principle, etc. It is this unknown quantity that knocks us on the head when we cannot understand how we lost our patient. Our nearest approach to an understanding of these unseen forces or powers, is like the search for infinity. There will still remain, like the gauzy curtain dividing life from death, a separation of scarcely tangible texture, penetrable to spirit only, impervious to physical sense, and yet we feel impressed by the magic power, conscious that *our* secret thoughts are known and judged by the mystic power so awfully near, just behind the screen. Impassible and charming barrier, precious contiguity! Here the best men of our profession and race have presented themselves by day and by night, sleeping or waking, waiting, waiting, watching, praying for one glimpse beyond the curtain, the abode of verity, the home of ultimate truth. Failing in this direction to discover the origin of first causes we fall back upon our own finite and limited resources and forge the phrase "vital," only another word for the unknown and possibly the unknowable.

The grosser forms of injury to the nervous system that are most common in lighting up the fires of inflammation, we can easily appreciate and understand. But there are other causes or injuries less manifest to our senses and observation, and yet are most potent and powerful to produce the gravest and most formidable forms of inflammation; so very idiopathic indeed that they range above, beyond, outside and independent of the

ordinary range of so called idiopathic causes. And right here is where the frog theories cease to have for us any value. A physician need not to practice very many years to become convinced that undue emotions, peculiar to human beings, giving but feeble outward signs, may rack the frame from center to circumference, dethrone reason, defy all rules, disturb the very soul's repose, and produce the train of symptoms of inflammation, directing the course to the most vital parts, leaving the body partially intact, first robbing it of all that makes life valuable, or existence tolerable. The nature of inflammation cannot be compassed and formulated definitely, except by investigation of its various causes, its phenomena or progressive course of development, its tendency unobstructed by art, and by modification produced by treatment. The sole object of our investigation into its nature is designed for its aim and end to direct us to the best course of treatment for its abatement and cure. The formulating of our theory is our first step in that direction. The proving of our theory is by obtaining satisfactory and successful results from the practice indicated by our theory. If another theory and another practice produces better results we are bound to distrust our theory, nay more—we should cast aside our theory and abandon our doubtful practice. Partisanship in medical theory or practice is a cruel and wicked taskmaster. In the presence of disease and impending death we ought to feel solemnly reminded of the obligations we owe to truth, and the greatest of all obligations, charity toward the opinions of others. Sink or swim, win or lose, God grant that we may enjoy the comfort and consolation of this heavenly grace. So, gentlemen, when I have, in relation to this subject, appeared an enthusiastic supporter or advocate of the anti-phlogistic treatment of inflammation, you must understand me as referring to what I call idiopathic inflammation, and by no means to what I call inflammation from specific causes. The early recognition of inflammation from specific causes, as small pox, measles, erysipelas, and the blood poisoning products of traumatic and idiopathic inflammation, led to what received the name "The Humoral Pathology." That is a branch of our general subject which I will not follow in this

dissertation further than to say that inflammation, from such specific causes, is still essentially inflammation, in all its phenomena and consequences as idiopathic inflammation, but that its proper treatment is as far from it as is the north pole from the south pole. Inflammation is not a disease *per se;* it is a natural process for the repair of injury, for the elimination of specific toxic matter that has reached the blood circulation, or it is the penalty and compensation nature demands for an immediately preceding injury or affront to the nervous system. In a state of health there is an equilibrium or equipoise of all the vital functions. Injury to one disturbs all; is appreciated and resented by all. To acquire, repossess or regain the natural status is alike the business of nature, and the object of the physician. As in law, punishment may appear enormously in disproportion to the offence, so in the inflammatory process, once the fire is kindled, medical art will have performed full duty, if it can moderate and modify the superflous and excessive natural impulses, preventing undue effusion and its train of disastrous consequences. Among doctors, as well as laymen, the most universally assigned cause for idiopathic inflammation is suddenly changed temperature, general or local, generally also from heat to cold, aggravated by moisture. Waiving the preliminary symptoms of sneezing, increased action of the lachrymal glands, and the stoppage of the secretions, yawning, lassitude and general undefinable discomfort and uneasiness, the first unmistakeable symptom of impending inflammation is the chill or rigor. That is the alarm gun for the coming struggle. The severity and duration of that chill or rigor conveys fair warning of the part the sanguineous system will take in the battle. The rigor or chill denotes the offense to the nervous system; it is the lighting's flash, but the heart and arteries will respond in crashing thunder. The former is the gathering of the waters; the later is the roaring flood.

Any discussion of a microbian cause of idiopathic inflammation is yet premature. What facts may yet be found, or what theory based thereon, I do not know and cannot pretend to forecast. So far as treatment throws any light upon the nature of inflammation it must depend upon the kind of treatment

given. Here, unfortunately, we are by the ears. My argument would be based upon my treatment and your argument upon your treatment. As to the products of unchecked inflammation, and the ultimate consequences of such products, we ought not to disagree, nor in that estimate should we overlook the barricading of the watchful, faithful guardian cells—to protect the system from universal infection and contamination. There is a field in the plan of treatment, yet to be cultivated, relating to the stage of chill or even before chill actually begins. After the chill, we know full well what will come next. But before or during the chill, cannot something be done to appease the nervous system or allay its severity and duration, and if so, might we not reasonably expect a modified or less rampant condition of the sanguineous system? Possibly some anaesthetic, either known or that may be discovered, that administered at that early stage, might so act upon the nervous system as to abort the natural train of symptoms that always follow.

My theory and practice is grounded upon a direct attack upon the sanguinary system. Of course the physician takes each case as he finds it, too often, not until the chill has gone and the heart and arteries are going at high pressure. Even at this stage may not the nervous system be forced to withdraw the vigor of its impelling force to the circulatory system? I well know the importance, advantage and utility of early venesection. The period for its greatest utility is before effusion takes place, just as a pail of water will stop an incipient fire, which neglected for a few moments will defy a torrent of water. Neither phlebotomy or any other medical treatment is of much promise after the stage of thickening of the serum, muco-purulencey, ulceration, formation of pus and gangrene.

The disasters wrought by the inflammatory process, as observed during life, and as revealed by post mortem examination, are referable entirely to undue or excessive natural work of the sanguineous system. Whether any course of treatment directed solely to the nervous system in inflammation subsequent to effusion will prevent the morbid changes that must occur from excessive vascular action may well be doubted at

the present stage of medical knowledge. Whatever line of treatment is adopted to prevent dangerous or fatal results from the inflammatory process, should be directed to the prevention of deposit, of whatever abnormal character, by the blood. I often hear you, or some of you, remark, somewhat guardedly, that perhaps in well selected cases phlebotomy may be performed with advantage. Were this the result of practical demonstration it would be much more to the point. This admission, so far as it goes, is consonant with the antiphlogistic theory; but is only grudgingly permissive. Those who would successfully teach, must *direct*, not permit. Once for all, I must beg to suggest that, in this behalf, individual experience alone qualifies to speak with authority. This qualification only will properly fill the expectation of students of medical art.

There are cases enough where we can make the daily visits and wait with patience and hope that something favorable will turn up, but an acute inflammation of a vital organ or part is not that kind of case. Fortunately, simple serous effusion may often become absorbed, taken up and removed by natural processes; *less often*, if it becomes muco-purulent, indurated or pus, and wisely so, for in the latter changed condition, unless the watchful cells shall have erected their barriers to prevent it, absorption develops an infective inflammation many times more dangerous than the original. Whether this last is more properly called hectic fever, or fever from infection, or secondary inflammation, or specific inflammation, matters little so far as a name is concerned Muco-purulent, or pus quantities, should be visited as soon as detected, *wheresoever located*, by lancet, bistoury, trocar, or needle and pump.

The word *inflammation* from "*flamma*" is not well chosen to express the cause, nature or initial factor in that process. It subdates the beginning of the disturbance and directs our attention to a single symptom of the secondary or consequential stage of the abnormal process, to wit: A sense of increased heat—largely a false impression, for the real increase of heat makes but feeble impression upon the thermometric scale. The term inflammation, however, has been so long and universally in use that it would be difficult to provide a new

word to take its place. Perhaps this is a proper place to allude to another closely allied condition universally designated *fever*. The prominent pathognomonic symptoms of these two abnormal conditions have such a resemblance and are often so difficult to differentiate, that an idea of a common or similar origin is forcibly suggested, notwithstanding a thousand authors and teachers have given us to understand otherwise. The word *fever*, from fire, as well as *flamma*, designates and represents in either case the sense or feeling of increased heat, whether real or only apparently or seemingly so. Neither of the terms relate to the primary origin of the symptoms, or give any idea as to the initial or starting point of the *flamma* or the fever. Even such terms, however, are not destitute of ability to constantly impress our *attention and curative efforts* in possibly a wrong direction. I earnestly ask you gentlemen to carefully and thoughtfully interrogate yourselves as well as medical writers as to this. Other words coined or selected at this late day I am aware would need the approval or fatherhood of a demi-god. The word hazel, without the prefixed witch, is merely an indifferent bush, but witchhazel is magical forever. Stand by the dicta of the fathers, though the heavens fall. That is just as appropriate, and just as inappropriate, in medical art as in law, philosophy or theology. Perfection in these branches of human knowledge seems apparently as far distant now as in the long ago. Our experience and observation teaches us, if it teaches us anything, that in all these matters there is a possibility that there may be a re-statement of general principles along these lines. It were idle to deny that there has been improvement, but the final, the ultimate, has yet to be said and written. In the main, men are born and die the same as of yore. Those who do not die, we claim to have saved by our art, but first or last all die just as from the beginning. *Vis medicatrix naturæ*, we may personify as of comely countenance, of gentle mien, most welcome and unseen visitor, whether men wake or sleep, still going about doing good, without heralds, unushered, unknown, unknowable, true inspirer of hope, of courage, of faith. Only another feature of the unknown quantity.

The nature of inflammation, like the nature of fever, we shall solve, if ever, at one and the same time. There is something prior to the *flamma*, something that antedates the *fever*. Both conditions begin with a sense of cold, or chill; both are followed by the sense of increased heat. This, if far enough to trace the symptoms to show us that neither *flamma* nor fever indicate anything as to the nature or cause of the symptoms observed or experienced, we must admit that the secondary factors, in either case, are disturbances of both the nervous and sanguineous systems, and in the nature of cause and effect. That the train of symptoms originates in either case in some offense to the nervous system, I think it palpably manifest. Of course the nervous system depends upon a constant supply of healthy blood, and the heart and arteries depend also upon constant nervous supply of energy. These functions are mutually dependent, one upon the other, and each sympathizes with the other. In inanimate nature we are not ignorant of the violent disturbance that occurs to molecular attraction by sudden change of temperature from heat to cold, as instanced in the congealing of water, the fracture of glass and metals, the tempering of steel and iron. In both *flamma* and fever, the treatment relates almost entirely to the prevention or controlling of the effects likely to be produced by an excessive action of the sanguineous system. The fatal results, in either case, are of the same nature and character. The primary symptoms and causes are of nearly allied character. Though we do not speak of specific causes for the term idiopathic inflammation, or of many fevers, yet, why not? Have we not seen cases enough of inflammation from a heated condition to cold, to make it quite certain that such sudden change is as certain to produce febrile or inflammatory action as is hot water or hot iron, or as contact with smallpox, measles, scabies or scarletina, is to produce those disorders. Why then is cold air not specific in its action? The shock to the nervous system produced by fright, though only temporary, is responded to on the instant by the heart's increased action. Though this quickly subsides, the damage to the nervous system may prove lasting. What we *do not observe* in the frog, dog and rabbit, as the emotions in man of

love, anger, fear, hatred, jealousy, mere shadows of reality, mere conjurings of the mind, as unreal as dreams, yet, unsubjected to sober reason, and the commonest common sense, may lay the foundation for many a lingering fever, many a desperate inflammation. Whether the poor bull-frog catches cold by getting his feet wet, or is exasperated by emotions as are men, I do not know. Are the effects of these inward disturbances the promptors to the final and fatal changes found upon post mortem examinations? I think so. Like the beginning of inflammation from traumatic and other recognized causes first manifest by the exciting effects upon the nervous system and depressing effects upon the sanguineous system culminating in chill or rigor. I would gladly sum up my conclusions by a theory upon which I think treatment should be based, and it would not be on the lines that you or I have been instructed, but that is not my undertaking in this brief paper. That would not be an answer to the problem you have given me. I have had, in mind, simply to trace the phenomena of inflammation as herein limited, to its origin. The light of my compass points to the nervous system, and if I have the bearings, it still leaves the how and the why unexplained. The secret mystery of the nervous system I cannot fathom, possibly you can. How it receives or imbibes its displeasure is a mystery. How it manifests its resentment we may discover in making our autopsies.

*Mr. President and Gentlemen:* I present you this brief paper on a great and important subject. That it is a perfect statement of the nature of inflammation I dare not affirm. As to the criticisms you may bestow upon it, neither myself or you are competent to decide as to their justness, fallibility or infallibility. The apparent and real truth is, that even at this late day, the theories and the practice for the alleviation or cure of this particular class of disordered actions, is in a decidedly chaotic condition. A hundred theories have been advocated and entertained, and at last cast aside as worthless. As to treatment, one extravagance has followed another; some cases have recovered, and the others have died. Every one thinks

he has cured some; none will admit that they have damaged some and killed others. I admit that I once had much firmer convictions as to a theory and also as to treatment than I have now. However, I am still unsatisfied and unconvinced that the most modern treatment is productive of better or equally salutary results as under a rule of practice which I followed with all its imperfections. You, gentlemen, are now in the race, and must run the gauntlet, taking the assaults from right and left, from front and rear, and I can only hope that, as you emerge from the ordeal, you may be awarded a crown of everlasting victory.

## DISCUSSION.

DR. GUTHRIE.—I cannot refrain from expressing my admiration for the paper to which we have just listened. When we consider that the essayist entered the profession over fifty years ago, we cannot but be struck with the clearness and cogency of his reasoning, and while we may not be in harmony with all his conclusions, we must admit that he has made a powerful presentation of his views on the subject.

As I sat and listened in admiration to the paper, I couldn't help entertaining the wish that we all, like him, might "grow old gracefully," and be found at his age with our "natural force unabated, and our eyes undimmed."

There is still a great diversity of opinion as to what the *inflammatory process* really is—whether due to nerve influence, to changes in the walls of the blood vessels, or in the blood supply. But as to the *nature* of inflammation, the profession is becoming more united in accepting the classification, *simple* and *infective*. We used to hear a good deal of idiopathic inflammation, but very little of it now. Take, for example, peritonitis. What do we find? A very large class of cases are undoubtedly septic, due to the absorption of poisonous elements retained in the uterus after labor or abortion—the so-called *septic peritonitis*. Another class includes those caused by tubercular deposits within the peritoneal cavity—*tubercular peritonitis*. Still another class embraces those arising from perforation of an intestine in typhoid fever or in appendicitis; and lastly, those due from a wound, as from a stab or gunshot, really *traumatic peritonitis*.

Now, we find that all the cases of peritonitis we meet may be arranged under these classes, and idiopathic peritonitis is legislated out of office. I think, too, that we may safely assume that all of the above classes may be claimed as *infective*. While it may not be possible to maintain the position taken by Hueter and, possibly, by Senn, that *all* inflammation is infective, it is certainly true that the ablest modern pathologists regard the number of inflammations not due to bacteria as "very limited in ex-

tent." Accepting the germ theory of inflammation, we regard the inflammatory process as a blessing, not an evil, as we once did.

How often have we heard and do, even now, that "the patient will recover if inflammation doesn't set in!"

Accepting the modern theory, the patient will often die if inflammation does not set in. Treves says that "it may be assumed that within a month or so of the disappearance of inflammation from the business of the body *the human race would become extinct.*"

According to this view the inflammatory process is nature's method of protecting herself against her foes. This is the Metschnikoff theory "that the cells of the inflamed part and the invading organisms are opposed to one another in a struggle for existence."

Take for example what occurs in a case of perforating appendicitis. The *bacteria coli commune* are at work inside, boring away toward the peritoneal coat, where the conflict begins. Millions of cells rise against the invaders and arrange themselves in solid phalanx around the point of attack. Hence the induration which we call inflammatory lymph. But we find after the battle is over and the invaders destroyed, when the softening takes place, that the battlefield has been completely walled off from the peritoneal cavity, and the resulting abscess may be safely relieved. How different in the cases of *fulminating* appendicitis. Here the enemy makes a sortie before nature can summon her forces, the unprotected peritoneum is invaded, and the citadel of life is taken.

This view of inflammation—and it seems the correct one—makes it a wonderful blessing. Damage results from the inflammatory process, no doubt. There is the thickened indurated mass about the appendix; there is the adherent lung; there is the disabled knee joint, the so-called white swelling after a tubucular arthritis. But how much better that the patient should lose the use of his knee joint, than that his whole system should be overrun with tubercle bacilli!

What damage was done at the battle of Gettysburg! Fields of waving grain, white for the harvest, were rudely trampled under foot, houses and trees were torn to pieces; the whole surface of the earth was mutilated, and desolation reigned supreme after those terrible days. But what was that compared with the calamity that would have ensued had the invaders been successful? I need not stop and depict the disaster. Your imagination can do that better than I. And this is what takes place if this scientific theory of inflammation be true. Whether it applies to all cases or not I do not pretend to claim, but it certainly is consistent with the conservative idea that we observe in other natural processes.

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Dr. Richard P. Taylor showed a gall stone of unusual size, and gave the following history:

H. T., aged 68, housewife, had suffered from bilious attacks

for a number of years. About a year ago I was called in when patient was suffering from one of her usual attacks; there was no pain in hepatic region, and very little, if any, jaundice. I treated patient for several such attacks which presented more the symptoms of acute indigestion than anything else. About six months ago patient began to get run down, and was advised to try a change of air, but had to return home on account of feeling very poorly when away. On her return I was called to see her; then she complained of pain in the hepatic region, and vomited all nourishment. I made a careful examination, and from the symptoms, the cachexia, and a history of cancer in the family, I came to the conclusion that the case was one of malignant disease, and mentioned so to the family. As Dr. Murphy had been the patient's former physician, I asked to have him called in consultation for a confirmatory diagnosis. A few days after Dr. Murphy met me and verified my diagnosis. In a few weeks the patient passed away; a post mortem examination was suggested to the family and received their assent. The post mortem was made by Dr. Fell and myself, Dr. Murphy being present. We found this large gall stone entirely filling the gall bladder, also a cancerous condition of pyloric end of stomach and pancreas, the peritoneum and mesentery were also much thickened. The stone is 4⅞ inches in circumference and weighs 173 grains.

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## EMPYEMA, OR PURULENT PLEURISY.

BY DR. A. G. FELL, WILKES-BARRE, PENN'A,

READ DECEMBER 18, 1895.

This is a condition where a pleurisy is attended with a collection of pus, rather than a fibro-serous as occurs in simple pleurisy. Its existence has been known from ancient time, but it is only of late years that it has acquired the attention necessary for its management, and for our consideration I shall divide it in its different headings.

### ETIOLOGY.

(1). It may arise from the conversion of a simple pleuritic effusion into a purulent one by the entrance of air, but to this Osler gives little credence, if proper precaution has been taken

to sterilize the needles and surface, and a hypodermic needle has been used. (2). It may follow certain specific fevers, as measles, scarlet fever, whooping cough in children, and typhoid fever in adult life, or it may come on insidiously during pneumonia, and in some cases accompanies tuberculosis. (3). It may follow traumatism, as fractures of the ribs, or penetrating wound of the thoracic wall, but from this cause we rarely have a case of simple empyema, but one in which the pus contains a large admixture of blood from injury of the pleura covering the lung and the pneumonic tissue itself. According to Dr. Osler: "A sterile exudate suggests tuberculosis, in many cases pneumococci; these, as a rule, run a favorable course. Streptococci are found most commonly in secondary cases connected with septic processes."

### MORBID ANATOMY.

The color of the purulent fluid may vary from one that is slightly opalescent to one of a greenish yellow, or to one of a brownish color due to the greater admixture with blood. On account of the certain extent of putrefaction which may take place in consequence of germs, heat and moisture, we may have considerable gas generated, but this is hastened by admission of air, without proper precaution. As to the quantity of fluid present, it varies greatly from a few ounces to quarts. This fluid may fill the whole side or occupy only a part, or it may be enclosed between the lobules or connective bands of fibrous tissue. We also find covering the entire surface a false membrane produced by deposit and by nature's method in throwing out guards, while pieces of these membranes may be found floating in the fluid, and when accompanied by gangrene this pus has a most offensive odor, this pus leading to septic trouble.

### SYMPTOMS.

As a rule this disease comes on insidiously, following some of the fevers, or an ordinary fibro-serous pleurisy. The pain may be almost nothing. In acute purulent effusion the symptoms are nearly those of acute pleurisy, viz: with or without a chill, fever, pain in side, lancinating in character, and most

distressing, respiration short, dread of coughing. In early stage, friction sound. Ordinarily the friction sound is absent on account of the accumulation of fluid. In those cases, following other trouble, we do not have the severe pain, nor dyspnœa, unless the side is well filled with fluid; the cough is generally dry, but may produce a sputum containing pus, etc., from a lung also diseased, or by infiltration of the pus from the pleural cavity through lung tissue to the bronchus, either by perforation or by osmosis. The temperature is ordinarily hectic in type, with symptoms of septic trouble—as loss of flesh, pallor, night sweats, etc.

### PHYSICAL SYMPTOMS.

The physical signs are those generally which accompany simple effusion, except that the oedema of the skin is almost always significant of pus. The interspaces ordinarily are more bulged There is flatness on precussion, except above the fluid, where it becomes most tympanitic in character. The non-transmission of the whisper voice is a sign of the transformation of the serous fluid to the purulent.

### DIAGNOSIS.

The troubles from which we are most frequently called to differentiate are pneumonia and fibro-serous effusion. In pneumonia we have only dullness on percussion, with increased vocal resonance and *fremitus*, but the rapid progress of pneumonia, the characteristic sputa, the high fever, the absence of septic pallor, and bulging of the intercostal spaces, would make our diagnosis almost a surety without the use of the needle, but this is the instrument on which our diagnosis to a surety must depend, as we know that while ordinarily the fluids of the chest change their position with change of posture, this is not always the case, as it may be sacculated, and the passing of a clean needle can do no harm, but will settle whether there is fluid present, and the character of the same. As to the kind of needle to be used, it is better to have a hypodermic that will hold about two drachms to one-half ounce, and a needle a little longer and of larger calibre than those ordinarily used, as the flocculæ are less liable to occlude the passage.

PROGNOSIS OR TERMINATION.

As this trouble is more prone to occur in childhood, and as the results are as promising as in the adult, we will consider the possible termination. These are divided in a number of ways: 1st, by absorption; 2d, by osmosis; 3d, by perforation of the bronchii; 4th, by opening through the chest wall, which is mostly in the anterior portion of the chest; 5th, by means of aspiration; 6th, by means of a free opening and drainage with or without irrigation. As to the first method, there is some doubt as to its salutary effects. We can find in the literature of the subject that no person is able to state in what direction the drainage is to take place; if left to itself we may have a breaking down, and following the courses between the diaphragm or through it; thus the pus may enter the peritoneal cavity and then by causing peritonitis of a septic character speedily terminate in death. Likewise, Osler, among others, has observed that it may follow the psoas and the iliac muscle and present all the symptoms of a psoas abscess in the groin. It may, if on the right side, cause a resemblance to an abscess of the liver. While these dangers are present, it may be absorbed, leaving a lime deposit or a mass of inspissated pus which later might and possibly will go on to softening and disintegration. Second—Some have questioned whether this absorption really takes place, but rather assume that the process of osmosis as secondarily taking place, is really the primary way of getting rid of the pus accumulation, and being expectorated gradually by coughing; or, third, that this, the proposition of breaking down of a bronchus is really the method of carrying off the collection. This can hardly be possible, because when a bronchus is ruptured we expect to have a profuse expectoration, and which, at times, is sufficient to drown the whole lung tissue, causing suffocation; but as often happens, we have an expectoration for some time which is profuse in character, but which stops on account of the absence of equilibrium of the air or atmospheric pressure; or, again, the ulceration is often the cause of a valvular flap being formed which prevents the further admission of fluid until the equilibrium is established, this, at times, causing pneumothorax; or,

fourthly, we may have a perforation of the thoracic walls which, on account of the numerous openings so caused, and which generally occurs in the anterior portion of the chest, allowing considerable discharge; but this is ordinarily at the height of the fluid and cannot sufficiently empty the cavity, at the same time allowing considerable infiltration of the sub-cutaneous tissue and also admitting of air, which is retarded somewhat by the process of entrance by the valvular provisions which nature makes, but nevertheless lend an assistance to putrefaction, and also is often followed by necrosis and caries of the ribs between which these openings pass, and at the same time in no wise draining the bottom of the sac. Fifthly, by aspiration. It is claimed by some that this is the best method. It might be in children, as many operators have stated, that we should, in these cases, try aspiration so that no air should enter, and gradually by sounding and percussing determine whether the fluid contents is diminishing in quantity, and thus by gradual procedure diminish the risk of collapse, or fainting, or cough, and allow the sides of the pleural cavity to approximate. But this, I think, is far fetched, and believe in the sixth or possibly the seventh, which my friend Dr. Kirwan will, in discussion, talk upon—that is, free drainage with excision; the sixth is free drainage without excision. Having thus traversed the ground hastily, endeavoring not to encroach upon your time, I will lastly take up the treatment. I do not disbelieve in medical treatment of these cases, but do believe that we should do all in our power to brace up the system with tonics, as cod liver oil, iron, strychnine, syr. hypophosphites, creosote, etc., and to combat any symptom or process arising. I think it well to treat this as a purulent collection, as we would if otherwise located, and that is by free drainage, and I do not think we should put it off until the patient becomes stronger, because that is not likely to occur until the cause is removed, and whatever the condition of the patient, under the circumstances, is, we should not postone the evil day, as it offers us no promise of advantage. If we resort to aspiration, there are points of selection, viz., between the sixth and eighth intercostal spaces in the mid-axillary line, and if that is the pro-

cedure it is an advantage to draw the arm of the side in which you wish to make the perforation so that its hand rests near the opposite shoulder, thus increasing the space between the ribs, and the needle should be inserted near the border of the lower rib, thus obviating the danger of injuring the costal arteries. This had better be done through bottles from which the air has been entirely removed, and, as has been suggested by one of the assistants at Johns Hopkins, can be furthered in a case, by having adult patients, when treated by aspiration, to daily or often daily force water from one Wolfe bottle to another, and thus by pressure on the lungs hasten the proximation of the granulated or diseased surfaces; but by this method I cannot but think that we are delaying matters, and for other reasons I prefer a free incision, for if air is admitted with proper precautions as to filtration there is not much danger and we have an equilibrium of air pressure both within the lung itself and in the thoracic cavity, thus obviating the danger of intra-thoracic hemorrhage due to the rapid expansion of the lung which may ensue on aspirating a purulent cavity. I think that it is necessary that the instruments be thoroughly sterilized, as well as all the tissue surrounding the operation. This applies to the operator's and his assistant's tissue as well as the person operated upon, as I believe that germs cross-breeding often fertilize those of their character and add to their virulence.

As to anæsthetic, I prefer to use only local ones, but circumstances arise where we are forced to use others and make it general, but, if possible, I would rather that they assume a partial erect position with the arm in the position most favorable to aspiration, using a local anæsthetic, then making an incision in either the sixth, seventh or eighth inter-costal spaces, drawing the skin upwards so as to form a valvular process of the skin. After cutting through the cutaneous surface and the muscular tissue and reaching the pleura, then to insert a hypodermic needle in search of pus; this being once found, to proceed. As to drainage, I have been in the habit of using soft rubber drainage doubled upon itself and stitched to the cutaneous surface, which, in all cases in which I have had any

dealings, has been sufficient; but I am open to conviction, as I noticed by Dennis's system of surgery that they recommend a fixed calibre, as of silver or aluminium, so that the ribs could not possibly compress them and always offer free drainage, and if necessary to resect the rib adjacent. Dr. Fred. Dennis follows this procedure with irrigation of 1-10,000 bi-chloride, then with water boiled or sterilized. I consider 1-10,000 too weak and prefer to use simple sterilized warm water as an irrigant. We might use Thiersch's solutions and others, and if the precaution is taken, a stronger solution than 1-10,000, following it with sterilized water, may be used. The dressings should be carefully prepared, sterile, aseptic and antiseptic. They should be so placed as to prevent all entrance of air unless it is filtered by passing through the same, packed around the exit of the tube, and well covering it, so as to allow of a ready and rapid exit, and at the same time preventing the entrance of extraneous material. Pardon me, but I must suggest to you the necessity of changing the position during the irrigation and washing out of the chest cavity, for by thus doing you allow the irrigating fluid to enter all the interstices of the cavity. If, after a reasonable time, we find that the walls do not approximate and that the discharge does not become infinitesimal and serous in character, resection of one or more ribs should be done, especially in childhood, under all the same aseptic precautions. I think that this applies also to traumatic purulent pleurisy from gun shot wounds, stabs, etc. I have had three cases of the same during my terms at the hospital, and think that my results have been most happy as to the persons wounded, and the persons who did the wounding.

Thanking you for your kind indulgence, I am hopeful that I have added one drop of water to the mighty ocean, if not one grain of sand.

DISCUSSION.

DR. KIRWAN.—As one of the appointed leaders of the discussion, I feel that I should say something on the excellent paper, by Dr. Fell, on Empyema that we have just heard. I will occupy your time briefly with the consideration of what I believe to be the only sound surgical treatment of empyema, viz., rib resection, or, as it is sometimes improperly

called, Estlander's operation; for Estlander's operation proper is a simple section of one or more ribs for the purpose of allowing the chest walls to accommodate themselves to a partially collapsed lung.

Rib resection for empyema, on account of the anatomical construction of the chest walls, if for no other reason, is the only sound surgical procedure there can be for the cure of empyema. Its advantages over aspiration, incision and drainage, or any such method, must be very manifest to any thinking surgeon.

My experience with it is very meagre, being limited to three cases in ten years' practice, but my faith in it is unbounded because it is based on sound surgical principles.

In looking over the work of and talking with other men and comparing their methods, it seems to me curious that good, careful, competent men will so often be satisfied with aspirating a large pleural abscess and only incompletely removing the pus, or even incising and putting a small drain in the pleural cavity only to be forced out in short time, or, nine times out of ten, compressed and collapsed by the adjoining ribs in very short time by movement of the patient.

I ask, is there any special reason why an abscess of the pleural cavity should not be freely opened and drained any more than an abscess cavity in any other part of the body? Certainly not, if it be properly done, and a single experience with rib resection for empyema will firmly convince you. Of course the surgical principle to drain from the lowest point of the pleural sac cannot be here carried out, because if we resect the ninth or tenth rib the rise of the diaphragm in expiration would occlude the opening, so that we are taught to resect the sixth rib if in the mid axillary, or the seventh about the angle of the scapula. This is the favorite site, and can of course be made the lowest point for drainage by posture. An incision of about two inches or more is made right down at once to the rib and through the periosteum, which is easily raised from the bone and pushed to either side, and these Carl Beck shears are applied and an inch or more of the rib cut out. The whole operation can easily be done in five minutes with a few whiffs of chloroform, a knife, and these shears, and the pleura incised. These are a smaller pair used in case of children. I also show you what is, in my hands, a better rib-cutter, designed by Dr. Charles Dennison, of Denver, who is one of the leading American advocates of this treatment of empyema, instead of the very unsurgical one of aspiration. And here we might appropriately, I think, say that the aspirator is a very highly prized machine in the hands of the surgeon who temporizes, or is uncertain of his diagnosis, or oftener of himself, and it is, and should be, an almost unknown instrument in the practice of good, sound modern surgery. Dr. Dennison claims for his rib-cutter, which a use of it justifies, that by the toggle-joint, which you see crowds the knife down on the periosteum separator, it gives the operator power enough to make a clean square section of the rib without wrenching or injuring the adjacent parts. Of course a large quantity of

pus should not be rapidly evacuated, but if a large absorbent occlusive dressing be used, you will thoroughly empty the cavity slowly, and cure your patient more promptly and surely than by any other method, and have the satisfaction of knowing you have done the only really surgical operation for empyema.

DR. LONG.—In regard to the symptoms of empyema and other effusions in the pleural cavity, when these occur on the left side, the heart sounds are muffled; if on the right side, the heart is displaced to the left, and consequently the apex sounds are displaced to the left. Wherever there is pus it must be evacuated, and this is as true of the pleural cavity as of any other part of the body. As to the method, that which gives the patient the best chance of recovery is the best method. As empyema occurs most frequently in children, and as the intercostal spaces are very narrow and drainage very difficult without resection of one or more ribs, that would probably be the best method; but if, as in adults, there is space enough between the ribs to allow free drainage, then do not resect.

As I understand Estlander's operation, it is not simply resection of one or more ribs, but is the resection of two to five ribs, removal of the costal pleura, and recovery by granulation. This is a serious operation, and not so simple as one has been led to expect from what has been brought out in this discussion. It should be performed when empyema has become chronic. Therefore my view of the treatment of empyma is simple drainage in adults and resection of ribs if the disease becomes chronic. The latter method is probably best always in children.

DR. WEAVER—I do not concur with Dr. Kirwan that the aspirator should be discarded entirely and that resection of the rib should be the uniform practice in cases of empyema. I believe that eminent authorities endorse the use of the aspirator in cases of small children. I think we ought, in case of small children, always first to try the aspirator; if that method fails, we have yet left to us incision and resection. My own experience with the aspirator covers only two cases. In both of these prompt and most satisfactory recovery ensued. In one case I drew, from a child of six years of age, more than a quart of pus. The cavity never refilled, and recovery was prompt and complete. In the case of small children I am in favor of trying first the use of the aspirator, and incision and resection if afterward needed.

DR. FELL, in closing, said: I do not believe in aspiration, as I consider that a collection of pus, wherever it is possible, should be removed and good drainage established, and that the repeated aspirations are more painful than incision of the chest wall. Anæsthetics are seldom needed.

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DR. LONG reported a case of diabetes insipidus in a child one year old; specific gravity of urine 1,000, and the estimated daily quantity passed, three quarts.

## SPECIAL MEETING AUGUST 12, 1895.

A meeting of the Luzerne County Medical Society was held this evening to take action upon the death of Dr. Rees Davis, one of its late members. Dr. James occupied the chair, Dr. Gibson was secretary, and there were about twenty-five members present. The chair stated the object of the meeting and called for remarks.

DR. HARRY HAKES was the first to respond to the chairman's call. He said that although the death of Dr. Davis was not a surprise, yet coming so soon after the death of Dr. Crawford, it reminds us that time is passing on and our days are being numbered. The speaker had known deceased for many years, and they had long been personal friends. "Dr. Davis," he said, "will be missed in the medical profession in this city. He was a man of more than ordinary intelligence, and stood in the front rank of the profession in this country. He was a shrewd man and careful in his diagnosis, and therefore understood his case before treating it. He never jumped at conclusions. He was a good man to advise with. He was honorable in the profession, observing carefully the ethics handed down by the fathers. As it is with nearly all of us, he did a great share of his work for nothing. Like many of our talented physicians he devoted the best years of his life to his profession and just succeeded in making a living." The speaker warned against the danger of too close application to study and work. He spoke in highly complimentary terms of Dr. Davis's conscientious devotion to duty and purity of character, and concluded: "When all is finished, may it be said of us as we can say of Dr. Davis, 'well done, good and faithful servant.'"

DR. WEAVER spoke as follows:

"*Gentlemen:*—The occasion upon which we are met to-night is to me one of mingled sadness and joy—sadness that we are called upon to part with one of the most honored and the most distinguished member of our society, and joy that relief has come to one of the greatest and most patient sufferers.

"Ever since I have been a member of this society I have had the honor and profit of being intimately acquainted with our deceased brother, and I am prepared to say, with all due respect to the living and the dead, that he easily stood at the head of his profession in this city and county.

"Of the elements which go to make up greatness, he possessed many. First of all, I may speak of his character. While not puritanic, austere or pessimistic, enjoying the manly and legitimate pleasures and sports of this life to as great an extent as any person I ever knew, he never did an act which would be improper for any one to do. In all my long acquaintance with him I never knew him to utter an oath, to indulge in intoxicants or even to smoke a cigar. His personal habits were certainly above reproach and might well serve as a model for all of us. He was as genial a friend as any person I ever knew. Intensely enthusiastic in any matter which interested him, whether in religion, politics, medicine, music, or the sports of the day, he was always an intensely interesting and companionable man. No man who knew Dr. Davis intimately could meet him without receiving both pleasure and profit.

"His patience, as displayed throughout the long and weary period of his suffering, was beautiful and sublime. From the first he knew the hopeless character of his malady. This would have made most men gloomy and despondent, but such was the loftiness of his character and the grandeur of his philosophy that he never complained of his fate nor murmured at his sufferings. He was always cheerful and apparently happy. The pleasantest meeting I ever had with him occurred during the last nine months, during which period he was entirely confined to the house. He took a lively interest in all the current events of the day, read industriously, and was the most companionable of companions.

"But he added to these beautiful attributes of character a mind of wonderful breadth, precision and accuracy. I have never met a man who was a more logical or honest reasoner. He had an absolutely honest mind. He never jumped to a conclusion and then bent the argument to prove the correctness of it.

He always proceeded logically from cause to effect, from premise to conclusion. This measurably accounts for his accuracy as a diagnostician. In this connection I will repeat what I have often said, that I never knew a man whose diagnosis I would esteem above that of Dr. Davis. I have known more than one physician whose mind was quicker, who could grasp the subject more intuitively than he, but I have never known a man upon whose judgment I would more confidently rely.

"As a surgeon Dr. Davis easily stood at the front. He was a cool, accurate and skillful operator. He usually knew his diagnosis before he began an incision, but in the midst of the most unexpected and appalling emergencies he was cool, collected and resourceful. His contributions to the subject of Placenta Previa has given him more than a continental reputation.

" He was one of the pioneers in laparotomy in this part of the State, having been among the first to perform ovariotomy. He kept well abreast of the times, and was familiar with all the details of the many modern operations.

"As a money maker Dr. Davis was not a success. He did not possess those methodical habits, or place that value on his services, which are essential to money getting. His sympathy for the poor and needy was so great that he was easily imposed upon by those who were competent to pay him for his services. He lived a busy life, worked industriously, and should have left a competency, especially as he lived a plain, temperate and unostentatious life.

" Dr. Davis was an untiring worker in any cause, public or private, which he espoused. Opposition only spurred him on to greater effort. A splendid example of this statement was given in his last great effort for the public. The president of the city council had written for publication in one of the morning papers a caustic opinion that certain members of the Medical Society had made a sorry example of themselves in calling upon the city fathers to give the citizens of Wilkes-Barre pure water. This was enough to stir the soul of Dr. Davis to its very depths, and, though then suffering from the malady which had

already sapped the fountains of his strength, he rose like a giant for the battle. He never was more logical or direct than on this occasion, and he won the victory at the very first assault. His argument on this occasion was perhaps the best of the many remarkable ones from him, which many of us can recall. He wielded a trenchant pen, and he was one of the strongest of controversialists. He had strong likes and dislikes, and a keen memory for any slight or injury, but withal a forgiving and loving disposition. Truly a great man has left us, a bright light has been extinguished. Let us profit by his example, emulate his virtues, and try to approximate his greatness."

DR. MAHON, of Pittston, was the next speaker. He had had neither a long nor an intimate acquaintance with deceased, but it does not require a lifetime, he said, to prove a friend or to find that a man is a gentleman. He had found Dr. Davis a gentleman in every respect and an able practitioner. The speaker told of having called Dr. Davis in consultation on a critical case, and afterward, having occasion to leave town, the family called him. When Dr. Mahon returned, the first visit to the patient convinced him that the family had more confidence in him than ever before. It did not take him long to find out that this was due to the many kind words Dr. Davis had spoken of him in his absence. "Acts like this," said Dr. Mahon, "rivet the bonds of friendship very close, and a man capable of such acts deserves all the honor we can give him."

DR. GUTHRIE said: "I feel that no words can portray his character so plainly as it was in real life. You had to know him and be intimate with him before you could discover and find out his true nature. Dr. Davis was a great man in many particulars. His personal characteristics were nobler than any man I ever knew. He was an educated man. He first acquired a classical education, which is rarely done by the professional men of the present day, then took his medical course and graduated. There were but few men I know of who were so well versed and well booked as Dr. Davis. He was thoroughly acquainted with all the ancient and present authors of the day. He could converse on any subject. Dr. Davis had

extremely good habits, was strictly honest in all his actions and business methods. He was truthful and could be relied upon at all times. As a medical man and physician he had few equals. He was sincere in all his work, and was perfect in his diagnoses. I would give more for Dr. Davis's advice than any man I know of in the profession to-day. It was his modesty that kept him from great renown and wide reputation. Had he been known by the people as he was by the profession, Dr. Davis would be one of the most prominent physicians in the country to-day. I do believe that great men's places can be filled and great honors conferred in many cases, but I must confess that Dr. Davis's place can never be honestly filled, nor can we do justice to his great nobility of character."

Dr. Long, who was Dr. Davis's attendant during his last moments, said that he had died as he had lived, at peace with himself and the world. His last request was that tracheotomy might be performed upon him so that he might get breath. When told that it would do no good, as the trouble was lower down, he said "Don't do any more for me, but let me go."

The society resolved to attend the funeral in a body, and Drs. Weaver, Guthrie and Long were appointed to complete arrangements for so doing; also to prepare a biographical sketch of the deceased.

## DR. REES DAVIS.

As was said by a member of this society at the meeting held August 12, 1895, to take action upon the death of Dr. Davis, "No words can portray his character so plainly as it was revealed in real life. You had to know him before you could discover and find out his true nature."

There was a certain reserve, an apparent diffidence, about Dr. Davis, which prevented him from impressing you strongly upon slight acquaintance, but the more intimate your acquaintance with him, the greater he appeared to you. His personal characteristics were of a noble order. His personal habits might serve as a model for any one entering the profession. Temperate in all things, of studious and thoughtful habits, he employed his leisure time either in abstruse study, or profitable relaxation. On superficial acquaintance appearing to be a retiring and taciturn person, he was to those who really knew him delightfully companionable. His range of information was wide and far-reaching, while his powers of reasoning were of a high order.

He began aright the study of the noble profession, which he so dearly loved and so highly honored. His preliminary education, for a person in his circumstances in life, was quite unusual. He was a college graduate, and a mature and logical reasoner, before he entered upon the study of medicine.

Dr. Rees Davis was born July 5, 1837, in Warren, Bradford county, Pa., being the ninth child in a family of eleven children. His father being a farmer, the subject of our sketch had only such educational advantages as the district school afforded. He attended these schools for a few months during the winter, and worked the remainder of the year upon his father's farm. Having obtained the rudiments of an education in this manner, at the age of twenty-one he entered the Susquehanna Collegiate Institute, at Towanda, where he prepared for college. At the age of twenty-two years he entered Marietta College, at Marietta, Ohio. He remained at this institution for one year, and then went to Hamilton College,

at Clinton, New York, from which in 1863 he was graduated with the degree of A. B. Before receiving his diploma, however, he enlisted in the Pennsylvania Volunteer Infantry, and served for six weeks, during the darkest days of our country's history. This was at the time the free soil of his native state was being polluted by the invading armies of the south. In common with many thousands more of his fellow citizens he rushed to the defence of his state and country. The emergency for which these troops were called out having passed, they were honorably discharged. Dr. Davis then returned to his home and began the study of medicine in the office of Dr. Benjamin Dewitt, of LeRaysville, Bradford county, Pa. In 1864 he entered the medical department of the University of Michigan. Here he remained for one year, spending his vacation in the office of Dr. DeWitt, at White Hall, Illinois, and assisted the doctor in his work. In 1865 he entered the Bellevue Hospital Medical College in the city of New York, graduating from that institution in the spring of 1867.

He then began his professional life in LeRaysville, Pa. Here he continued the practice of his profession for two years, but the hardships of a country practice, coupled with the few opportunities for improvement, which such a location affords, induced him to abandon it. In February, 1869, he moved to Providence, Pa., now a part of the city of Scranton, where he practiced until January, 1871, when he took up his residence in this city.

On April 4, 1867, soon after graduating from Bellevue Medical College, he married Margaret E. Williams, of Pike, Bradford county, Pa., who, with three children, still survives him. His oldest daughter, Maude, died in the year 1892. She was a very attractive and promising young lady. Dr. Davis was very much affected by this family affliction, and some of his nearest friends date his decline in health from this sad event.

Doctor Davis was not long in this city before his sterling qualities began to be recognized. He soon took first rank among the surgeons of this locality, and ere long his reputation extended far beyond his adopted city. He was among

the first, in this part of the state, to perform the operation of ovariotomy. He was soon recognized, by his associates, not only as a very superior operator, but as a diagnostician of great accuracy. He was a slow, patient and methodical investigator. His sense of touch was superb. In any case where a physical examination was required, whether the case was a medical or surgical one, his judgment was reliable, and his diagnosis almost always accurate. He had few equals anywhere as a diagnostician. He always proceeded logically from cause to effect, from premise to conclusion. He never jumped to a conclusion in diagnosis, and was never satisfied with an opinion until he had eliminated all sources of error. Where a physical examination did not permit him to arrive at a positive conclusion, his favorite method of diagnosis was by exclusion. The more abstruse and involved the reasoning required, the more obscure the case, the greater was the interest aroused in him. As an operator he was cool, collected and resourceful. His methods were often original and his execution skillful and accurate. His method of treating placenta previa, that dreadful night-mare of the obstetrician, was perhaps the best ever suggested, and it justly won for him the favorable notice and recognition of the scholarly men of his profession all over the country.

According to Prof. William Goodell, who quotes him at great length, Dr. Davis performed the second vaginal ovariotomy on record. Dr. Goodell says that he, himself, performed the seventh operation by this method, but of all the cases reported at that time, Dr. Davis' case deserved especial notice both on account of the size of the cyst and the extent of the adhesions. Dr. Ashurst, in his surgery, also quotes Dr. Davis as an ovariotomist, and cites the above case. Dr. Parvin pays tribute to his genius as an obstetrician by giving an account, in his work, of Dr. Davis' method of treating placenta previa. His paper on this subject, read before the State Medical Society in 1876, attracted much attention, and on account of its merits he was elected an honorary member of the Philadelphia Obstetrical Society. He was also an active member of the Luzerne County Medical Society, and one of its ex-presidents;

of the Pennsylvania State Medical Society, and an ex-president; of the Lehigh Valley Medical Society, and of the American Medical Association.

He was an extensive contributor to medical literature, especially to the proceedings of our own society. His style was clear, terse and often epigrammatic. In 1886 the State Medical Society, then convened at Williamsport, Pa., elected him its president. This election was without effort or solicitation on his part, but was brought about by his many friends. At the annual meeting held at Bedford Springs in June, 1887, he took for the subject of the president's address, "Skepticism in Medicine." No president's address delivered before that body in many years has been the superior of this. It was a noble defense of the beneficence of medical art. But one quotation from that address will show the beauty of the style: "An age of such intense mental activity is one favorable to progress, and progress is everywhere visible, but it is also an age highly favorable to the development of skepticism, and that, too, is visible everywhere. It defiantly unfurls its banner upon every rampart of thought. It invades no less the domain of medicine than that of religion. It is rampant in our midst to-day. It pursues the physician everywhere; to the seclusion of his study, to the assembly of his fellows, and alas, too often, to the bedside of the sick, palsying there the hand that should be strong for succor."

A reference to the minutes of our own society reveals the following contributions from Dr. Davis:

May, 1871. Report of a case of Ovarian Tumor.

September, 1871. Remarks on Vaccination.

January, 1874. Report of a case of Vaginal Ovariotomy.

May, 1874. Remarks on Tracheotomy. Case of Dilatation of Urethra by filiform bougies.

January, 1875. Cases of Placenta Previa.

March, 1875. Dressing for fractured clavicle devised by Dr. Chas. Washburne. Demonstration.

May, 1875. The Diagnosis of Fever. Case of Ovarian Tumor.

September, 1875. Pelvic Peritonitis, Cellulitis and Hematocele.

January, 1876. Case of Hernia of Liver in Infant.

January, 1877. Report of Case of Hydrophobia.

May, 1878. Paper on Diphtheria.

November, 1879. Forceps in Labor.

March, 1880. Report of removal of Vesical Calculus.

April, 1881. Vaccination: Paper on.

March, 1882. Report of two cases of Lithotomy.

August, 1885. The Potability of the Water of Large Cities: A paper on.

March, 1886. Paper on Rabies.

February, 1887. Discussion of a paper on the "Watery Discharges of Pregnancy."

March, 1888. Report of a Median Operation for Stone.

August, 1890. Paper on "Obstruction of the Bowels."

January, 1894. Report of two cases of operation for disease of the Kidneys."

April, 1894. Discussion on the question of Water Filters for the City of Wilkes-Barre.

June, 1894. Paper—"The Filtration of City Water."

These papers and discussions show that Dr. Davis was an industrious and enthusiastic worker in the profession. He did not hide his light under a bushel, but tried to maintain an interest in the proceedings of the society by contributing everything in his power to that end.

Though Dr. Davis never aspired to public place or position, he was intensely interested in everything of a public character, and on more than one occasion he became the tribune of the people in asserting and defending their rights. He was always in hearty sympathy with the masses as against corporate greed or imposition. He was an untiring worker in any cause, public or private, which he espoused. Opposition only stirred him on to greater and more determined effort. A splendid example of this statement was given in his last great effort for the public. The president of the city council had publicly taken issue with the Luzerne County Medical Society on the question of the power of the former body to compel the water

companies to filter the water supplied by them. This was enough to stir the soul of Dr. Davis to its very depths, and though then suffering from the malady which had already sapped the fountains of his strength, he rose like a giant for the battle. He was never more logical or direct in argument than upon this occasion. It was perhaps the best of the many remarkable arguments of his which many of us can recall

While conceding, as every one who knew him did, that Dr. Davis possessed a mind of wonderful breadth and much cultivation, and, at the same time, an absolutely honest mind, it was as a friend that he was most admired. He was a charming companion. He had a wide range of information. He was always ready to meet you on common ground, whether discussing medicine, politics, religion, or the current issues of the day. He had deep-seated religious convictions, yet he was too broad in his views to be hampered or circumscribed by sectarianism. He believed in the Fatherhood of God and the brotherhood of man. His religion possessed none of the elements of Puritanism. He was fond of all the legitimate sports of the day, and took much pleasure and recreation in their observance. He was enthusiastically fond of music, and in the rendition of a grand chorus he seemed to be exalted above his natural surroundings. But it was in his last long and painful illness that the grandeur of his character was best exemplified. Until about two years ago Dr. Davis was in the full vigor of mental and physical manhood. He suddenly noticed one day an inability fully to raise one arm. For a short time he thought it a rheumatic ailment, but a careful study of his case caused him to notice a wasting of the ball of the thumb and increasing loss of power in the arm. It extended to the other arm, and in a few months the arm first attacked became anchylosed from disuse. Very early in the progress of the case he made the diagnosis of progressive muscular atrophy. This diagnosis was confirmed by Dr. William Pepper, of Philadelphia. The disease stole slowly but surely to all the muscles of the body. From November 1st, 1894, until the time of his death he had not left the house. Long before he abandoned his out-door work he was so crippled that it was painful

to see him making his daily rounds attending to his patients. His mind remained clear to the very last, and he spent his time in reading. He seemed not to have lost interest in the events of the day. He loved to see his friends, and never seemed so genial as during the long period of his affliction. From the first he recognized the hopelessness of his malady, yet he never murmured or complained of his fate. He met the sad conditions which confronted him with philosophical resignation. He was always cheerful and apparently happy. To one of his medical friends, who was about to leave this country for a sojourn of a few months in Europe, and who called to say good-bye to him, he said with a smile: "I shall not be here when you return," and his prophecy was correct.

In his relation with his patients he highly represented the characteristics so beautifully portrayed by the author of a "Doctor of the Old School." He was ready to make any sacrifice of comfort, to forego any pleasure, in order to minister to the needs of the afflicted, while no one with whom your committee has been acquainted put a poorer estimate on his services, or was less exacting as to compensation, than Doctor Davis. Had he been compensated according to the value of his services, he would have become affluent, whereas he died poor.

Dr. Davis's influence over his patients was profound, and at his death the grief of many of the old people to whom he ministered for many years in their hours of affliction, was so intense as to be the highest possible tribute to his fidelity in the discharge of his professional duties. Do you wish to solve the mystery of the high esteem in which he was held by his patients? In concluding his address before the State Medical Society, already referred to, in urging large faith in and fidelity to the practice of our noble profession, he said, quoting from Dr. Latham's address of more than half a century before:

"Diseases are not abstractions; they are modes of acting, different from the natural and healthy modes of disorganizing, modes of suffering, and modes of dying—and there must be a living, moving, sentient body for all this.

"This body must be your study and your continual care—

your active, willing, earnest care. Nothing must make you shrink from it. In its weakness and infirmities, in the dishonors of its corruption, you must still value it, still stay by it, to mark its hunger and thirst, its sleeping and waking, its heat and its cold, to hear its complaints, to register its groans.

"And is it possible to feel an interest in all this? Aye, indeed, it is; a greater, far greater interest than ever painter or sculptor took in the form and beauties of its health.

"Whence comes this interest? At first, perhaps, it seldom comes naturally; a mere sense of duty must keep it alive. Presently the quick, curious, restless spirit of science enlivens it, and then it becomes an encitement, and then a pleasure, and then the deliberate choice of the mind.

"When the interest of attending the sick has reached this point, there rises from it, or has already arisen, a ready discernment of diseases, and a skill in the use of remedies. And the skill may exalt the interest, and the interest may improve the skill, until, in the process of time, experience forms the consummate practitioner.

"But does the interest of attending the sick necessarily stop here? The question may seem strange. If it has led to the readiest discernment and the highest skill, and to form the consummate practitioner, why need it go further?

"But what if humanity should warm it? Then, this interest, this excitement, this intellectual pleasure, is exalted into a principle and invested with a moral motive, and passes into the heart. What if it be carried still further? What if religion should animate it? Why, then, happy indeed is that man, whose mind, whose moral nature, and whose spiritual being, are all harmoniously engaged in the daily business of his life; with whom the same act has become his own happiness, a dispensation of mercy to his fellow creatures, and a worship of God.

"Such a man any of you may be; but you must begin by learning to stand at the sick bed, and make it your delight." Such a man was Dr. Davis.

From our standpoint, the eventide of his life came too soon. He was a man of magnificent physique and temperate habits.

It might reasonably have been expected, therefore, that his life would be spared for many years to come. True, he had passed the spring and summer of his days. The winter of age had not yet commenced, however, to shed upon him its prophetic snow. We had all expected to witness the rich, mellow, autumnal days of his life. In this we were disappointed. We had accustomed ourselves to seek his assistance and to lean upon him in great emergencies. We shall miss him at such times in our experience. He had much to live for, and he had a strong desire to see his son prepared to succeed him. Yet, perhaps, we should not mourn too much over his departure. He fell not as a martyr, seeing only in dim perspective the fruition of his hopes. He was not "cut off in the blossom of his days, while yet the vigor of manhood flushed his cheeks, and the harvest of glory was ungathered." He had reached the zenith of his professional life, had crossed the meridian.

He has left an enduring reputation as a legacy to his family and the profession, which he honored. While we mourn his loss, and regret his untimely departure from us, we can exclaim:

> "Ne'er to the chambers, where the mighty rest,
> Since their foundation, came a nobler guest,
> Nor e'er was to the bowers of bliss conveyed
> A fairer spirit, or more welcome shade."

## THE DEATH OF DR. GEORGE H. KIRWAN.

A special meeting of the Medical Society was held December 30, 1895, to take action upon the death of Dr. Kirwan. The society was called to order by President James, who stated the object of the meeting, and requested members to make remarks as they might wish.

DR. WEAVER: Knew Dr. Kirwan well, and spoke feelingly of his ability as a physician, and his worth as a man. He brought out many facts, hitherto unknown, regarding the work of Dr. Kirwan as a physician and surgeon, especially in the latter branch of the work, while his tribute to the frank and manly qualities of the deceased was heartfelt and sincere.

Dr. GUTHRIE said: "It is difficult for one properly to express his feelings under such trying circumstances as these. And these occasions are coming among us very frequently of late. It is less than five years since we were called upon to lose our Nestor, Dr. Mayer, and since his death, Dr. Jones, Dr. Crawford, Dr. Davis, and now Dr. Kirwan, have all passed away.

"It was known to some of Dr. Kirwan's friends that he had appendix trouble; he had referred to it, and spoke of having an operation performed sometime.

"He had recently had indigestion, and was not feeling quite like himself, but was up and about until Christmas day. About five p. m. he was attacked with severe pain in the epigastrium, followed by vomiting. He took several doses of salines, but these were promptly rejected. He sent for me at 3 a. m., December 26, and I found the pain so severe that a hypodermic of morphine was necessary. About 10 a. m. the pain was less, but there was no doubt as to the diagnosis of appendicitis, and an operation was advised. This was done within forty-eight hours from the inception of the difficulty, but rupture had already taken place. The appendix was large, showing evidence of old catarrhal trouble. There was considerable pus in the abdominal cavity, which was thoroughly irrigated. He rallied partially, but not fully, from the shock, and died about 7:45, December 28. This, I take to have been

a case of fulminating appendicitis, in which the appendix perforated without warning.

"Dr. Kirwan's personality was pleasing. There was about him a frankness and outspoken honesty that could not fail to command respect.

"He was unbiased and unbigoted, and while firmly grounded in his own religious belief, he recognized in its fullest sense the fatherhood of God and the brotherhood of man. His personal friends, and those that loved him best, were of opposite views to his own. Personal integrity and personal honesty were his chief characteristics.

"Of his standing as a physician and scientific man I need say nothing here. We all know him from the papers he has read at this society. We knew his methods and we knew his ability. He was in touch with progress, and with the best medical thought of the day. I think, perhaps, he sometimes went to extremes, but this was to his credit. Enthusiasts are ever in the lead, and without enthusiasm no man can gain distinction in any walk of life. He was one of the most active, most modern, and most prominent medical men among us. No words of mine can tell you how shocked I was at his untimely death. No words of mine can tell you the satisfaction, at times like this, to know of my association with such men. There is a feeling of fraternity existing among the medical men of this section that is most satisfactory. As we look around on the faces that adorn these walls, it is a satisfaction to know that the same fraternal feeling that existed with these men is still here. It is a source of satisfaction to us also to know that our relations with Dr. Kirwan were of that cordial, pleasing kind."

Dr. R. P. Taylor said: "I have known Dr. Kirwan for the past fourteen years. Last Tuesday I saw him in consultation in a case in my neighborhood, and he was then hearty and rugged. Though not feeling well for the past week, he nevertheless looked the picture of vigorous health. On Friday I called at his house, was taken to his room and conversed with him for a few minutes. He told me of the diagnosis, and that an operation was to be performed. He asked, 'What do you

think my chances are?' and I tried to cheer him up all I could. To know Dr. Kirwan, one had to know him well. To meet him two or three times one could form no idea of his true character. My relations with him were most pleasing and friendly. Anything he could do for another would be done with all his power. He was not a bigoted man in any sense, but treated all alike, and he did much charity work that will never be known."

DR. CORSS, while not having any personal relations with Dr. Kirwan, said he knew of him as one whose standing was high as a physician and surgeon. The tributes paid to him, by his associates, were uniform in this line. His sudden death presents to us a lesson that we all have repeatedly to learn; that in this disease death is always imminent. Softening of the tissues may occur and collapse follow.

DR. HARVEY said: "While the others have been talking my mind has gone back to the time when I first knew Dr. Kirwan. This was as an errand boy in his father's drug store. Many who knew him then referred to him as a boy bound to make his mark in the world. I was particularly impressed with his knowledge of therapeutics, and he always seemed able to solve any knotty problem in this line."

DR. HAKES said: "The shock of Dr. Kirwan's death comes to me with unusual force, though I have schooled myself to look at these things as inevitable. Outside of the domestic circle, the thing that shocks medical men most is the death of one of their own number, one of their brethren.

"Dr. Kirwan was born ten years after I graduated in medicine, and lived in a different day and generation. I did not know him professionally, but have met him several times and talked with him on different subjects. Though standing high in his profession, he was also well up in the general literature of the day. This is of value always. We judge a man rightly by his general ability. He was a firm believer in the general doctrines of christianity, but was not hide-bound in his opinions. I believe that if our dead friend were in Africa and could see the unwashed native rolling in the mud in religious worship,

he would neither scoff nor sneer, but doff his hat in reverence to a feeling which is inherent in our nature. He had ambitions, ambitions high and honorable; first in his profession, and also in other directions. And this was right, for a man does not amount to much who has none. He has done his work, but he is not dead. The spirit lives, the man cannot die. He is still here with us.

"My heart goes out to his young wife in her hour of bereavement. I recently met them walking arm in arm on the street, full of life, ambition and hope. What can the world offer to her better than to know that the men who knew him best, and associated with him, have said 'well done?' It is worth living to spend a life like this. When the verdict is found, it is the verdict of men, it is true, but this is also the verdict of God."

Dr. Lewis H. Taylor said: "So much has been said by others of the ability of Dr. Kirwan and of his many admirable traits, that I need not refer further to them. I want, however, to call attention to one point not especially mentioned, and that is in reference to his devotion to and interest in this society.

"The day after our last meeting, less than two weeks ago, he called to see me to talk over a scheme that he had in mind for the betterment of this society, the plan being the appointment of committees for the investigation of various special departments of medicine, and the result to be presented to the society in the form of annual reports. I approved heartily of his plan, and assured him I would do all that I could to help carry it out. He remarked, as he had previously done, 'I am convinced that our society is capable of doing better work than it does, and I wish we could devise some plan to bring out the good work of which the members are capable.' He left me cheerful and hopeful as to the future.

"I cannot speak of Dr. Kirwan personally as some of you who were more intimately associated with him; but this I can say, that while I had come to know him only in recent years, the longer I knew him the better I liked him.

"Many of you know the pains he took with the very excellent paper that he read before this society last year. It might surprise some of you to know the time and expense spent upon

this paper, but it was characteristic of his work. Whatever he did in this line he desired to do well. He was taken from us when the future was bright before him, and I believe if he had lived his work for the profession of medicine would have been eminent."

At the conclusion of the remarks a committee of three, consisting of Drs. Roe, R. P. Taylor and E. A. Sweeny, were appointed to prepare suitable resolutions on the death of Dr. Kirwan. They reported as follows:

WHEREAS, This society has heard with deepest regret of the death of Dr. Geo. H. Kirwan, who was one of the foremost thinkers in our ranks, and one of the most enthusiastic workers in the affairs of this society, as well as the profession in general,

*Resolved*, That the sympathy of the society be extended to his bereaved wife, his mother and sisters.

*Resolved*, That the society attend the funeral in a body, and that the president appoint a committee of three to make the necessary arrangements.

Drs. Fell, Matlack and Shoemaker were appointed to make the necessary arrangements for the attendance at the funeral.

Drs. Guthrie, Weaver and Sweeny were appointed a committee to prepare a biographical sketch of the deceased.

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# TRANSACTIONS

OF THE

# Luzerne County Medical Society,

FOR THE

## Year Ending Dec. 31, 1896.

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FOR THE

## Year Ending December 31, 1896.

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# ADDRESS OF THE RETIRING PRESIDENT.

DR. T. A. JAMES, ASHLEY, PA.

ANNUAL MEETING, JANUARY 8, 1896.

*Honored Guests and Members of the Luzerne County Medical Society:*

There are a few pleasures in life which have no alloy; it is my good fortune to enjoy one such in the privilege afforded me this evening. One year ago I had the honor to become the President of this Society. During that year the dread destroyer Death has been among us and taken from our number two whom we held in the highest esteem, and whose names we shall honor as long as this society exists.

During the past twelve months this society has brought forth six vigorous sons, one still born, one in a state of suspended animation, two have withdrawn, leaving our present membership seventy-five. In view of the deep interest which all feel in the profession we have chosen for our "life-work," I have taken for my subject, "*Medicine—Its Past and Present.*"

Rude appliances to wounds and injuries, and some equally rude observances in case of internal disease, are common among the most barbarous people. Even in the dark ages, where little was known of medicine, the Egyptian and the Hindoo believed in the healing power of the priest, insomuch as they thought "disease to be the anger of some invisible being made manifest."

The early history of medicine as practiced in ancient Greece is clouded in darkness. We are all familiar with the fable of Esculapius, but as to its truth we cannot say. But it is generally conceded that the sick were in the habit of visiting the temple of Esculapius, where, lying at the feet of the statue of a god, certain sacred ceremonies were performed, the remedy for the disease being made known by a dream. But the temples of Esculapius were not the only sources in which the healing art was given attention, for in the schools of philosophy some attention was paid to this as a branch of education. The

"*Charlatans*," also, without any pretence at education, offered their drugs for sale in the market place.

Following closely upon these came the disciples of Hippocrates, who had a crude idea of anatomy, which had been derived solely from the dissection of animals, as it was considered a very grave offence to mutilate the human body. The idea which these men had of physiology was about as crude and limited as was their knowledge of anatomy. They believed the body to be composed of four elements, differently combined in different individuals, and derived from them we have the four humors of the body—blood, phlegm, bile and black bile—from which again are derived the four temperaments. They also believed disease to be a disordered condition of one of the fluids.

In Greece, after Hippocrates, little was done in medicine until the time of Aristotle, the great philosopher, whose father was a physician, but whose knowledge of the human body had been gained by dissecting animals. He laid so thoroughly the foundations of anatomy that for ages little was added to it. He distinguished between the nutritive, the motive, the sensitive and the intellectual faculties. He does not locate the intellect, but from several of his writings it is inferred that he supposed it to be in the heart.

After Aristotle came the foundation of the noted Alexandrian Library, at a time when books were scarce and so expensive that they were within the reach of very few. With this *human* dissection became permissible, and this gave a great impetus to the study of medicine. We have no remaining records of this great Alexandrian school except those scattered through the works of a few Greek writers. Two of the most noted scholars of this school discovered the "proper function of the muscles," the "proper function of the nerves," and also invented the "catheter."

About 150 years after this, a famous rhetorician began the practice of medicine in Rome. He divided disease into two classes, "acute" and "chronic." Previous to his time it was believed, as I have said, that disease was produced by a disordered condition of the fluids, but he contended that this was

only a secondary matter, and that solids were always first affected, which dispute, in various stages, has continued even to our own time.

During the next 600 years, so says Pliny, the historian, Rome was without physicians. Some attempts were made during this time to cure disease, but they consisted chiefly in weird incantations and superstitious rites. Following the advice of the famous Sibylline, Books, pestilence and disease were checked by erecting temples to the god of medicine or by celebrating public games. Cicero's great friend was a physician, and Cæsar, when captured by the pirates, was accompanied by his physician.

The chief Latin medical writer was Celsus; his "De Medecina" comprises what was known to the ancients on that subject, and shows the great strides which were made in this science in consequence of the labors of the anatomists at Alexandria. He treats of many of the great operations in surgery, of the operations for stone, hernia, wounds of the intestine, and cataract. He speaks of the trephining in injuries of the brain and of the use of ligatures in cases of divided or lacerated blood-vessels.

Gálen has more renown than any physician of antiquity. For twelve centuries his authority was undisputed; even facts were disputed if against his authority. Besides the "fluids" and the "solids" he had a third doctrine called that of the "*spirits*." They were called natural, vital and animal spirits. From the time of Gálen medicine began to share in the decline which had already overtaken art and literature. Dissections were no longer made, and medical writers contented themselves with copying from the works of Gálen. It was only when the science of medicine began rapidly to decline that its immense importance began to be realized. Up to this time in the pagan cities *anyone* could practice medicine at will, making his way by talents either possessed or assumed, generally the latter. But at this time quackery and imposture themselves suggested a much needed remedy. The Christian Emperors decreed that no one should practice medicine without being previously examined. They were paid by the state, but were bound to attend

the poor gratuitously. These physicians ranked with the principal officers of state.

While the Western Empire had sunk into barbarism, and the Eastern, sadly limited, was struggling for existence, the study of medicine found its refuge among the Arabs. They did little to add to what was already known except to give the first clear account of eruptive fevers, and to discover certain pharmaceutic preparations which have been of great value.

As order again began to emerge from the chaotic state into which this science had fallen at the time of the fall of the Western Empire, monks and priests began to take up this noble work, and some medicine was even taught in the monasteries. Between the 9th and the 13th centuries the Jews became famed as physicians.

About 1315 a professor in the University of Bologna dissected the bodies of two females. He published a book with the anatomical description of the bodies, which for the next 300 years was the conceded authority. He did not open the cranium for fear of committing a mortal sin.

Such was the state of affairs when, in 1543, Vesalius, a professor of anatomy, published his great work, pointing out the errors of Galen, and maintained that his descriptions were taken, not from human dissections, but from those of apes. The physicians and the learned did not indulge in original research, but rather sought to revive the works of antiquity. Now as medicine began to show marked signs of improvement, surgery also began to show signs of new life. The physicians of this age were mostly priests, and they were forbidden by the church to shed blood, so the surgical operations were performed by men called barber surgeons. As matters began to improve the priests occasionally operated, and the barber surgeons sought to improve themselves.

The circulation of the blood was discovered in the 16th century. After circulation came the discovery of the true theory of respiration. The end of the last century witnessed the most important discovery in the history of medicine. This was vaccination. Up to that time, it was said that 400,000, in Europe alone, had succumbed to that dread disease, small-pox.

In the late Franco-Prussian war more French soldiers died of small-pox than were killed in battle, while the disease was unknown in the German army because of compulsory vaccination.

Then came that Doctor of the "Old School" whom Maclaren has described so well in that charming book, "*Beside the Bonnie Brier Bush.*" His remedy was "a blister for the outside and Epsom salts for the inside."

It was well said that the discovery of antiseptics marked a new era in the history of medicine, for it has revolutionized the whole system of surgery. Previous to Prof. Lister's discovery the mortality in a series of operations was 45.7, while we find the death rate diminished to .36 in a series of operations of the same kind, antiseptics being used with the latter.

I cannot forbear speaking of Ephriam McDowell, the village surgeon, who, in 1809, was called to see a woman, whom her physician had pronounced pregnant but who had overgone her time. He told her she was suffering from an ovarian tumor and suggested its removal, but truthfully said it would be but an experiment. In the face of this appalling statement she answered, "Doctor, I am ready." On a bleak December day she rode sixty miles on horseback that she might be near him so that with his own hand he might ward off the approaching danger. When it became known what he was to undertake he found a mob gathered around the door. He knew that success meant, all would be well; but if he failed he would be at the mercy of a merciless mob. He offered up a prayer and proceeded with his task. Dr. Eastman, who pays him such a glowing tribute, says, "Greater heroism was never displayed by any man." Martyrs burned at the stake could not escape death if they would. This man might have abandoned his principles and escaped the danger. The operation was successful, and to this day has not been improved upon, for the substitution of the gauze for the drainage tube still more nearly approaches the ligatures which he allowed to hang out of the lower angle of the wound, the best of capillary drainage.

When we think of the victories won by Napoleon, of the continents conquered by Alexander, of the conquests of Cæsar and Cicero, before our minds comes the picture of the orphans

and widows they have made, the tears that have been shed for their glory, of the heart-aches they have caused, and we are tempted to say, "Truly there are men greater than these." The physician who, instead of tears and sorrow, brings joy and peace to the home, is he who is actuated by the higher principles of his profession, and whose only aim is to do the *greatest* good for his afflicted brothers. Truly it is greater to save life than to win many battles.

We who are privileged to sit around this table this evening are proud to say that we live in an age of progression, an age of discovery, of scientific research, of unlimited resources. We are not, as were our forefathers, men who must accept the dictum of those in authority, for we are able to think for ourselves, to step boldly into new fields and advance our own opinions.

And now, as we have reached the close of this the 19th century, we are entitled to the proud satisfaction of knowing that we have well-cared for the invaluable legacy left us by our professional forefathers.

In conclusion, I desire to thank you for the honor you conferred upon me when you elected me your presiding officer. I have tried to serve the interest of our society as best I could, and I am very grateful to all who have so kindly assisted in making our meetings both interesting and profitable.

And lastly, let us keep the standard of our profession high, and let us cultivate still more the fraternal feeling which should invade all our hearts and firmly unite us in every measure that tends to make our life-work more enjoyable by the sympathy and good fellowship of our medical brethren.

# HYDROTHERAPY.

BY J. I. ROE, M. D., WILKES-BARRE, PA.,

FEBRUARY 5, 1896.

During the past year or two our society has had under discussion a number of very interesting and profitable subjects with reference to therapeutics. "Cellular Therapy" and "Serum Therapy," among the newer methods of the treatment of disease, have been ably and thoroughly presented. But to-night, for a little while, I want to invite your attention to one of the oldest means for combatting disease of which the profession has any knowledge—to a remedy, and perhaps the only remedy, which has stood the test of centuries, and stands, to-day, by far the most useful of all therapeutic measures which we have at our disposal. I refer to the subject of Hydrotherapy.

The history of this subject is most interesting. Undoubtedly the first mention of the use of water for the prevention of disease is found in Holy Writ. And the laws laid down by Moses to the children of Israel, concerning ceremonial purification, enjoins very fully the use of baths, and might well find room for enforcement at the present day. The modern aseptic surgeon could scarcely formulate a better rule than that laid down by this ancient law-giver, when he says: "Whosoever toucheth those things shall be unclean, and shall wash his clothes, and bathe himself in water, and be unclean until the even."

The very earliest medical writers showed a knowledge of hydrotherapy, and Hippocrates lays down principles, which are both sound and practical in the light of ninteenth century medicine. I quote a few sentences from his writings on this subject, which I am sure you will appreciate. "The bath," he says, "is useful in many diseases. Sometimes it must be less used than it would be otherwise from the want of accommodation; for in few families are all the conveniences prepared and persons who can manage them as they ought to be. And if the patient be not bathed properly, he may be thereby hurt in no inconsiderable degree, for there is required a place to

cover him that is free of smoke, abundance of water, materials for frequent baths, but not very large, unless this should be required. * * * In general it suits well with cases of pneumonia; for the bath soothes the pain in the side, chest and back; concocts the sputa, promotes expectoration, improves the respiration, and allays lassitude; for it soothes the joints and outer skin, and is diuretic, removes heaviness of the head, and moistens the nose."

Asclepiades, the bosom friend of Cicero, was a warm advocate of water, and insisted upon being called a water doctor. He it was who founded the school of medicine which equipped for practice such illustrious men as Antonius Musa, the physician who saved the lives of the emperor Augustus, and of the poet Horace; Cornelius Celsus, the bosom friend of Ovid, and also Galen were his pupils. They were all ardent advocates of water, and applied it successfully in many acute and chronic affections. In later days Cheyne, Huxham and Currie, well known in English medicine, and Hufeland, the celebrated German, were enthusiastic hydrotherapists, as were still later Neimeyer and Ziemssen. In our own country, and recently, this method has found warm and able advocates in Drs. Draper, H. C. Wood, Baruch and others. To Dr. Baruch, I think, more than to any one else, belongs the credit of bringing, and keeping before the medical profession, this subject, and to his interesting writings I am much indebted for the material for the foregoing historical sketch. It is well, at the outset, that we should not confuse the term hydrotherapy with that of hydropathy. The regular school of medicine knows no pathy, but adopts remedies, no matter what their nature, which are best adapted to the relief of disease. Dr. H. C. Wood holds that the espousal of water as a remedy by empirics is, to-day, mainly responsible for the aversion of many physicians to its adoption. He asks: "Are we just to ourselves or to those who intrust their lives and health in our keeping in maintaining this attitude? Is it not rather our duty, nay, our happy prerogative, to carefully scrutinize, by modern methods of research, the past history of the application of water in disease, to ascertain the defects arising from its empirical

use, and to wrest from the quack a weapon against disease whose power stands second to none in the catalogue of therapeutic agents?"

In works on therapeutics, it is the custom of writers to first give the physiological action, and then the therapeutic uses of any given drug. This is a wise plan, for if one is familiar with the action of a remedy from a physiological standpoint, one can apply the remedy with much greater intelligence and success to the various pathological conditions in which it may be indicated. So, I conceive, in considering the use of water in the treatment of disease, it is well that we should be familiar with its physiological action. Much progress has been made in this direction during the past few years, and we are now able to understand quite clearly the exact effects produced by the use of this agent, and are thus enabled to explain, from a scientific standpoint, its great value in the treatment of disease. Indeed, I believe, that the chief reason why the use of water has not been more generally adopted is because the rationale of its effects upon the system, as well as the technique of its application, have not been thoroughly understood. In some of the German schools special chairs are devoted to its teaching. I am not aware that such is the case in this country. In fact, German writers comment on the lack of appreciation of hydrotheraphy by Americans; but, I believe, the interest taken in this subject during the past few years in this country is such that it is now on a solid footing, and is quite as generally appreciated as by our brothers of the other side.

The general term hydrotherapy includes both the external and internal application of water, either cold, hot or medicated. The subject, however, is such a vast one that I shall, at this time, consider only the external use of cold water.

In the first place it is of especial importance that we study the physiological effects of cold as applied by means of baths, douches, or wet sheets or towels to the surface of the body. Winternitz, at the International Congress of Medicine held at Rome, read a most interesting and exhaustive paper on this subject, and the result of his researches has done much to place hydrotherapy on a rational, scientific basis. The limits

of this paper will allow but a brief outline concerning this part of the subject.

The effects of the general application of cold upon the composition of the blood is to increase red blood corpuscles. The leucocytes were increased three fold, and the hæmoglobin fourteen per cent. This is accounted for by increased activity of the heart and circulation, and improved nerve tone, the red and white cells being thus driven out of the organs in which they were accumulated. The respiratory interchange of oxygen is increased. It stimulates and gives tone to the nerve centers, from which all vital energy emanates. The pulse becomes twelve to twenty beats slower; respiration approaches the normal; desire to urinate ensues and muscular power is increased. The *rationale* of this action is based, as before stated, upon the increase in red and white blood corpuscles, and upon invigoration of heart, lungs and general condition. With this brief outline concerning the physiological effects of the external application of cold water, let us now proceed to the consideration of its use as a *therapeutic* agent.

It will not be my object to attempt anything like a full study of this subject, but rather to deal, and that but briefly, with the value of hydrotherapy as it can be applied in the every day practice of the general physician. There is certainly no means which has so universal an application, or is so flexible in its adaptability to the treatment of disease. Perhaps there is no condition which affords a better illustration of the value of cold water applications than that of *typhoid* and other *infectious fevers*. I presume we have all read, with much pleasure, that charming sketch from "The Doctor of the Old School," which describes, so touchingly, how Dr. MacLure and his friend Drumsheugh carried water from the spring, and with such rude appliances as they had at hand gave poor Saunders the thorough tubbing that saved his life. And I am sure we have all felt the joy of triumph which filled the heart of the good doctor as he and Drumsheugh threw off all restraint and engaged in the bonniest of bonny Hielan' flings in the meadow by Saunder's house the next morning.

The control of temperature by cold applications has a great

advantage over that by the use of antipyretic drugs. The latter masks the other symtoms and depresses the vital organs, and as Baruch tersely says: "Its only advantage is that it allows the patient to die with a normal temperature." Not so with the use of cold water; and I cannot better describe its wonderful power than by quoting from a recent article of Baruch's: "Place a patient suffering from any severe infectious disease, with high temperature, into a bath of 70° F. for fifteen minutes; practice active friction and observe the result. Elevated temperature, rapid and perhaps feeble pulse, shallow respiration, dulled intellect, lost appetite, concentrated and scanty urinary and other secretions indicate that the nervous system is overwhelmed by the products of infection. So soon as he enters the water he gasps. The shock and subsequent stimulus to the cutaneous surfaces are conveyed to the nerve centers and thence reflected to the heart, lungs and the other organs. Observation at the bedside at once renders these effects patent. The first effect is refreshment and enlivenment of the cerebrum. The eyes are opened; the face loses its apathetic stare, consciousness returns after one or more baths; the inspiration is deepened; expectoration is facilitated; the widening of the peripheral vessels and the stimulation of their coats relieve the heart; blood pressure is increased, and the laboring organ becomes as quiet as does a sea-tossed ship in the hands of a skillful mariner. The secreting glands are aroused to activity. Moreover the temperature is reduced, not so violently as by medicinal agents, but more definitely, more in accord with normal tendencies. In brief all the manifestations of the disease are favorably influenced because the normal standard is slowly, but steadily and lastingly approximated under the influence of repeated judicious bathing. Even the most exacting demands of the most recent ideas are met by this treatment."

Undoubtedly the best method of applying cold in typhoid fever is by means of the bath. In hospital practice where proper facilities are provided and trained nurses are at hand this is quite a simple matter. A portable bath tub fitted with a steel mattress which can be raised or lowered by means of an endless chain and rachet is placed in position by the side of

the bed. A narrow piece of framework attached to the tub by means of a hinge forms a bridge between the tub and bed. A rubber sheet, perforated in the center, is placed under the patient, and he is gently drawn from the bed onto the mattress frame, which is then lowered into the bath, the perforations in the sheet allowing the water to pass through. The patient remains in the bath about fifteen minutes, during which time ice water is applied to the head and brisk frictions made to the surface of the body, except, of course, the abdomen. The temperature of the water should be about 70° F. Where patients suffer very much from the shock of the bath the temperature of the water may be higher at the beginning, and cold water gradually added until the required temperature is obtained.

The ingenious arrangement devised by Dr. A. H. Burr, of Chicago, and which was shown by Dr. Tyson at the last meeting of the State Medical Society, it seems to me, would make it quite possible to carry out this method in many cases in private families, provided one had the attendance of a trained nurse. Dr. Burr's tub consists of a large rubber sheet to the margins of which iron rings are attached by means of elastic tapes. A folding crib is provided, which, being unfolded, forms a solid frame. The rubber sheet is first slipped under the patient, brought up over the pillow, and tucked up along side of the body. The frame is then placed down over the patient, resting on the mattress, covered by the rubber sheet and surrounding the patient and pillow. The edges of the sheet are then drawn up and over the top rail of the crib down to the lower rail and fastened by its rings. This makes a light and perfect tub, holding twenty gallons of water. It can be emptied by syphon in four minutes. Both of the above described tubs possess a great advantage in that the patient does not have to be lifted from the recumbent position in order to be bathed, thus avoiding what at first was an objectionable feature of the Brand method.

There are many cases—in fact the large majority of cases met with in private practice—where, for one reason or another, it is impossible to make use of either of these arrangements,

and we must content ourselves with less heroic methods. I believe, however, we have in the wet sheets, or towels, and in sponge baths, means which should always be made use of to reduce temperature. And in all cases where the temperature reaches 102.2 or higher, applications of this kind should invariably be made. It is surprising how thorough and frequent applications, in this manner, will control fever, and add to the comfort of the patient. Some people fear to use cold water externally, thinking the patient will take cold. By directing the addition of a small quantity of alcohol to the water and assuring the friends there will then be no danger, prejudice of this kind can usually be overcome.

That there is a great value in the hydriatic treatment of typhoid is best proven by statistics. The mortality of this disease previous to the use of cold baths, varied from twenty to thirty per cent. During 1894, Tyson treated thirty-one cases with a mortality of only three per cent. The year previous, before the bath treatment was started, his mortality was twenty per cent.

Osler states that the mortality in Johns Hopkins for the year previous to the introduction of hydrotherapy was 24.2 per cent. For five years, since its use has been adopted, the percentage of mortality is 7.3, the mortality in the cases which were bathed being 6.6 per cent.

In view of these figures who can doubt the importance of using this most valuable means of combatting disease? And what it has accomplished in typhoid, I believe it is capable of accomplishing in several other diseases.

For a long time I have been convinced that cold applications were the most rational treatment for inflammatory disease of the chest—bronchitis, pneumonia and pleurisy—but I must confess that it is only recently that I have had the courage to put to test my faith in that treatment. At last, however, I am glad to say, I have made a break from poultices, turpentine and camphorated oil, and for the past few months have treated nearly every case of this character—in both children and adults—by the use of cold compresses. And I am free to say that never, in my experience, have I seen as good results. If taken in the

early stages I firmly believe a great majority of cases can be aborted, and those which are not, I am sure are rendered milder, and all symptoms held under better control. I consider that in cases of children especially, this is *the* treatment. Boardman Reed, in a recent article says: "Water locally applied is the *most* efficient *single remedy* or therapeutic measure which we have." Upon deciding to adopt its use I anticipated no little objection on the part of friends and relatives, but I have been surprised that in not a single instance has its use been opposed. In order to overcome any possible prejudice, in this as in typhoid, I have had alcohol added to the water, and I would say, in passing, that I believe alcohol has, in this way, served me a better purpose than in any other to which I have ever applied it.

The technique of the application of cold water compresses is of some importance. I usually direct that a turkish towel be wrung out of water at a temperature of 80° F. to begin with, reduced gradually to 70° F. The towel is wrapped about the thorax and covered by a dry one, and if at hand, both by oil silk. The applications are to be changed every fifteen to thirty minutes, according to the amount of pain and height of fever. I have been most highly gratified at results obtained by this procedure. The temperature is reduced, the respirations become slower and easier, the heart's action is improved, and pains relieved. In one case in which I used this plan the temperature was 106.5 F. and the beneficial effects were apparent within twelve hours, the patient having a rapid convalesence. Another case was that of a boy of five years who had never escaped a winter without a severe attack of broncho-pneumonia. A few weeks ago I was called and found him in the first stage of his usual attack. Temperature 103, pulse 140, and respiration 40, with all physical signs of beginning congestion. I ordered the usual remedies, but instead of the oil silk jacket formerly used, directed cold compresses. The next day he was decidedly better, on the second day his condition was nearly normal, and he made a rapid recovery.

The only case in which I did not use cold compresses in the beginning was that of a child of nine months, who had un-

doubted pneumonia. I could not quite trust those in charge with the application of cold, so used the old applications. The case progressed favorably for four or five days, when owing to unusual carelessness in exposing the child, there was a marked change for the worse. Temperature 104.5 and respiration and heart very rapid. At this late stage of the case I now advised cold compresses, and was delighted, at my next visit, to find my little patient very much improved, and a rapid resolution took place in a few days. I could multiply cases similar to those cited several times, all treated with the greatest possible satisfaction, and I can commend, with the utmost confidence, its adoption by my brethren in the profession.

One of the most beneficial uses of the cold baths is in the treatment of catarrhal affections so prevalent in this valley. "How to keep from taking cold?" is a question often asked, but seldom satisfactorily answered. I firmly believe that the taking of a cold bath, say 75 or 80° F., every morning, followed by a brisk rub, will so fortify the system that ordinary, and I might say extraordinary exposure will not result in taking cold. Many of our patients cannot, and many will not take a full bath of this kind every day, and the next best thing is a cold sponge bath, especially to the upper part of the body. Even a thorough cold douche to the back of the neck, which you all know seems to be especially sensitive to draughts and is usually the place where one feels the first chill that ushers in a cold, I say a cold douche thoroughly applied to this region every morning will often prevent the taking of cold. Many of the cases of chronic nasal catarrh result from a frequent repetition of acute attacks, which I believe are entirely preventable by carrying out the above suggestion. And I also believe that many cases of acute inflammatory attacks, such as tonsilitis, otitis, pneumonia, etc., may be prevented in this way.

Some years ago I was the patron of a very intelligent and well educated knight of the razor, who was a native of Hungary, and whose early life had been spent in that country. One day, as I sat in his chair for a shave, he regaled me with the following "fairy" tale: When a lad in his native land he suffered at one time from a very severe and obstinate attack of

ague. Every other day he would shake and burn and sweat. All remedies failed to cure his case, and he was persuaded at last to visit an old woman, who had a secret mysterious cure that never failed. One condition which she imposed upon all her patients was that the secret of the treatment should not be revealed. He went to her place a short time before the expected chill. He was taken into a small yard in the rear of the house, in the center of which was a large vat filled with clear cold water. Three times he was marched around the vat, and then instructed to lean over its edge and look intently until he perceived distinctly his own reflection in the water, the woman in the meantime repeating some mysterious incantation. In the midst of this performance, and without the slightest warning, he was suddenly plunged headlong into the pool. Being speedily and safely extricated, he was given a brisk rub, and it is needless to say for the first time in weeks he escaped his attack of ague. And he assured me that from that day he never again had a return of his malaria. I may have entertained some doubts regarding the veracity of the above story, but after reading the following from the pen of a recent foreign writer, Strasser, I am inclined to believe in its truth. Strasser says: "*Malarial fevers*, especially intermittents, are successfully treated by cold douches, 60° F., for two minutes, followed by friction for half an hour. The beneficial results are doubtless due to an increase in the number of lencocytes as described by Winternitz. Cases are on record which have resisted quinine, arsenic, and change of air for three months, and which were promptly cured by the cold douche one half hour before the time for the paroxysm."

Dr. Geo. E. Clarke, in a recent article in the *Medical and Surgical Reporter*, advocates the application of cold water in the treatment of *Appendicitis*. Cloths, about four inches square, wet in cold water, are applied to the right iliac region and changed, if necessary, every three to five minutes until the pain is completely relieved. Cold enemata are given at the same time." He concludes his article as follows; "I am not a fanatic; I do not believe that cold water will cure every case of Appendicitis; I do believe that surgical measures are some-

times necessary; but I do believe that cold water, used early, freely and often, in the manner indicated, should first be tried, and if the symptoms do not improve within twenty-four hours, surgical measures should be considered."

"The only efficacious treatment for the pyrexia of *Sunstroke* is the use of the cold bath in the most active form, as these are cases which necessitate anything but temporizing measures. Ice to the head, and ice water baths or sponging with brisk friction of the skin for the purpose of bringing the hot blood from the center of the body to the periphery, is the most satisfactory method of treating this disease. Antipyretic drugs will not control this form of fever, and are worse than useless." (Hare.)

A recent writer claims that by the conjoined use of taxis and the cold douche, 90% of all cases of Strangulated Hernia can be reduced in a few minutes, and that the use of anæsthetics is seldom required.

There are very many other diseases in the treatment of which hydrotherapy occupies an important place. I will not further weary you by going into details. The use of ice bags for Meningitis and for Diphtheria, is familiar to you all. Cold compresses in acute Laryngitis and Tonsilitis are always beneficial; and in the treatment of convulsions in children with hyperpyrexia there is nothing so important as the judicious application of cold water.

I cannot close this paper without just a word regarding the value of hydrotherapy in many of the chronic asthenic cases which are so difficult to relieve by other treatment, and must once more allude to the great work which Dr. Baruch has accomplished along this line. Through his efforts there has been equipped, in New York, the Montefiore Home for incurables, an institution which receives for treatment incurable cases only. Hydrotherapy is here carried out most thoroughly and most intelligently, and many cases that have been admitted, both from other hospitals, which declined to retain them on account of incurability, and from private practice, have been discharged cured or greatly improved

Most of these are desperate cases, including Phthisis, Diabetes, Bright's disease, and a variety of functional and organic

nervous diseases which make the institution the Salpetriere of America. Of course it is impossible, in private practice, to carry out hydriatic treatment with a degree of precision such as is applied in an institution of this kind; nevertheless, I believe many cases of the above mentioned diseases can be greatly benefited by the judicious and intelligent use of such means as every physician can have at his command.

In conclusion, I desire to thank you for so patiently listening to this feeble attempt to put before you some of the advantages of hydrotheraphy, and I trust the discussion of its merits may lead to its greater adoption in our every day practice.

## DISCUSSION.

DR. WEAVER.—I do not think that the cold bath cuts short an attack of disease. At least this has not been my experience. I have seen the temperature continue above normal for sixty days where the bath was used daily. Nor has the death rate in my practice been as low in cases where the bath was used as where it was not. Nevertheless, I think hydrotherapy a useful adjunct to treatment in pyrexia. I have found it succeed in pneumonia in an infant where every other attempt to reduce the temperature failed. In the sudden elevated temperatures of children in hot weather there is no agent equal to cold water. I have seen a case of strangulated hernia, where every effort at taxis had failed, reduce itself by the persistent use of ice. I saw a case of appendicitis, which seemed certain to require an operation, slowly end by resolution, by the persistent use of cold water and an ice-bag. Hydrotherapy has its field of usefulness, but it is not a cure-all.

DR. J. T. HOWELL.—We all use cold water in our practice to reduce temperature. I can recall several cases in my experience in which the use of cold water has been very effectual. In a case of scarlet fever in which the temperature was 107°, and the glandular swelling very extensive, I used an iced bag to the throat, but thinking iced water was more effectual, compressers wrung out of the iced water were applied, and the patient sponged with cold water every three hours for several days. This had the desired effect of lowering the temperature, and the patient made a good recovery. Cold water sponging is also very grateful to our little patients during the heated term; it reduces temperature, quiets the nervous symptoms, and gives them a feeling of well-being.

DR. LEWIS H. TAYLOR.—In listening to such an admirable paper as that which Dr. Roe has just given us, we feel that there is no room to dissent from the opinions of the writer. But one of the pleasing features

of this society is the fact that we are all so well acquainted that we do not hesitate to take opposite views, and so we are glad to hear Dr. Weaver expressing an opinion somewhat opposed to that of the essayist. I believe strongly in the use of water as a therapeutic remedy, both for external and internal use. Some years ago I read a paper by Dr. Conner, of Michigan, advocating the use of hot water, as hot as could be borne, in eye diseases. This I have found very useful in all inflammatory conditions of the eye, especially in conjunctivitis, iritis, and some forms of corneal ulcers. The method of using is this: let the patient take a basin of very hot water, lean his head over it, and using the hollow of his hand as a dipper, bring the water up against the eye, repeating this action for five or ten minutes at a sitting.

The internal use of water opens up a wide field of discussion. We have not in this country as yet made so great a point of our various mineral springs and baths as has been done in Germany and other European countries. While the water of Carlsbad and other famous springs are no doubt of great value, of still greater value is the strict regime as to diet, sleep, &c., that is insisted upon. I believe if we could have our patients follow out the same rules at home and observe the same hours, we could get excellent results with any water, even with that unsavory article from Huntsville dam, if first boiled and filtered. These rules, however, cannot well be carried out at home; and so, many patients will find it of great value to take the so-called cures at the springs themselves.

Dr. Guthrie.—I agree heartily with Dr. Taylor in all that he has said, and one point particularly it seems to me should be emphasized. It is not the particular kind of water used as it is the drinking itself and in quantity that is of value. We see various waters advised for various diseases, but these are all expensive and sold for about a dollar a gallon. This is a swindle. Any water would answer the purpose, that is any pure water. Take a case of kidney disease. Here water should be used. Richardson says distilled water because it is the purest. Here in Wilkes-Barre we can get good water from the neighboring mountains for five cents a gallon, and when I advise my patients to use them I believe I am doing as much good as if I advised Poland, Lithia, or other expensive waters. If Lithia waters is wanted it is better and cheaper to use lithia tablets and dissolve them in ordinary water. One of the sins our water companies will have to answer for is found in the fact that they have led the people away from the good custom of drinking water pure and fresh, into "bye and forbidden paths" of drinking something else. Personally I drink a large amount of water and know it is of great value.

# SPECIFIC BLENORRHAGIA.

BY E. C. WAGNER A. M., M. D.,
WILKES-BARRE, PA.

*Mr. President, Members of the Luzerne County Medical Society:*

The same old subject, chestnut you may call it, or at least it may fall under that head when, on the morrow, the demerits of this attempt will be discussed *privatim*. Still this same chestnut, "specific blenorrhagia," has often so hard a burr, that the gonorrhoici ring their hands in despair and fly to the bosom of charlatanism, Hood Sarsaparilism, Three S-ism and the like.

You all know what Blenorrhagia is. The cause—poor woman-kind (they, poor feminines, are always held accountable), gonoccoci, and a certain unknown something else. How it is acquired: Non-sanitary water closets, straining, exposure to the north wind, etc. The symptoms: Moaning and gnashing of teeth. How long it may last: Well—a lifetime. It shall be my object to devote a few moments to the treatment of this Venusque trouble in the male. Before entering into the subject proper a few anatomical remarks will not be amiss. We have, starting schematically the *fossa navicularis, pars cavernosa, pars bulbosa, pars membranosa, and pars prostatica.*

I. (*a*) *Urethritis anterior acuta*: or urethritis acute from the meatus to the pars membranacea. This is the ordinary beginning form and in some cases remains limited. I say in some cases, as a great many genito-uninary specialists give statistics, in which as high as 87.6% of the urethrit. anteriores were complicated by posterior urethritis, due to simple continuity, lymph channels, traumatic influences, over exertion on part of the patient, excesses in Baccho or Venere, early injections, friendly druggist's aid, Big G, etc. Microscopically the gonococcus can be demonstrated in every form (at some time or other) of specific urethritis.

(*b*) *Urethritis posterior acuta*, or inflammation of the pars membranacea and pars prostatica (acute). From the symptoms, with some care, a diagnosis of the site of the inflammation can usually be made.

For the diagnosis of the acute ant. urethritis, Thompson's method is the best. (Of course excluding the endoscopic examination, very few of us being in a position to acquire the degree of proficiency necessary.) I use two ordinary ¼ to ¾ pint glasses; the patient is told to urinate into the one glass and, after a goodly quantity has been passed, the second glass is handed him and he is told to empty his bladder. Or, if your patient is in any degree a trustworthy one, he is told (in case of momentary anuria, due to either prior urination or to your overawing presence,) to urinate in the morning upon arising, into two perfectly clean bottles, label them respectively one and two, and bring them to you.

If the first portion be cloudy and the second clear, you may put it down that you have a case of acute ant. urethritis. A few drops of acetic acid will remove any possible error from phosphates.

If both the first and the second portions be cloudy, the first more, the second less, you have to deal with a gonorrhoic inflammation from meatus to the bladder.

In sub-acute cases, however, the second portion may be clear, and we still have a posterior urethritis. This is explained by the fact that the secretion is more scanty and the first urination removes all muco pus.

II. In the chronic varieties the diagnosis becomes more difficult. Also, here we have several means of discovering the play-grounds of the gonococcus: Thompson's or its modification by Goldenberg. Pass an ordinary double-eyed rubber catheter (after lubricating with glycerine) into the urethra up to the membranous portion. This point can be discovered by the sense of resistence offered, unless strictures of very large caliber exist. Attach a syringe or irrigator to the catheter and wash out the urethra repeatedly with warm water. Examine the washings: whether cloudiness exists or whether, what the German's call "Fæden," *i. e.* mucopurulent shreds are present. If present, you have a urethritis chronica anterior. Press on the prostate repeatedly and then allow the patient to urinate. The urine washes the posterior urethra (the anterior urethra has been washed). If the urine contains "Faeden" or hooklets,

which, by the way, are secretions pressed out of the prostatic ducts, you have also a posterior urethritis.

Goldenberg's modification consists in inserting a glass, hard or soft rubber tube into the urethra, and passing it to just below the fossa navicularis, and then attaching the irrigator.

The prostate is spindle-shaped. Anterior we have the strong *detrusor urinæ* muscle; posterior the weak *orificium vesicæ*. Any secretion accumulating in the ampulla, naturaly flows in the direction of least resistance, *i. e.* towards the bladder.

When the secretion is scanty, have the patient come early in the morning, before urination, as during the day frequent urinations wash the secretion away, and hence, upon examination during the day, the second portion (urinary) may be clear, and you may be led astray.

In the chronic posterior variety we have the usual symptoms pointing to its existence; frequent pollutions, loss of power, pain during emissions, too early emissions, aspermatism, which can be due to either stricture or infiltration about the ejaculatory ducts.

In examining for cystitis the catheter of course is passed into the bladder proper. By the way, in doing this you will often notice a difference in the length of the catheter necessary. This is due to the fact that an empty or partially empty bladder has no neck. When the bladder is full you can draw urine at 17-19c., when empty at 21-23 centimeters. When the neck has been formed there is a tendency to urinate. The urine is kept back by the *sphincter prostaticus* or *constrictor prostaticus*, a voluntary muscle not to any degree by the *sphincter internus*, a nonstriated muscle. Finger says (Blenorrhœa der sexual organa, p. 29): "The bladder has no separate sphincter —the escape of urine is not prevented by any part of the bladder muscles, but exclusively by the contraction of the urethral muscular system. The bladder is consequently no closed organ *per se;* it is not closed in the direction of the urethra; it does not possess the power to prevent the entrance of solid or fluid bodies which have once passed the urethral sphincters or by their presure are pushed toward the bladder."

Thus ardor urinæ is explained. The patient is comfortable

for a short time. Urine has been accumulating; the neck of the bladder is being formed; the mucosa and the external constrictor are in a condition of irritation and consequently a few drops of urine escape and cause the ardor.

Treatment— (*a*) ACUTE URETHRITIS.

Cut down the diet—meats, rich foods, asparagus, condiments, strong tea, strong coffee, alcoholics, etc. As regards alcoholics —when it is impossible, due to social surroundings, to abstain entirely, an occasional glass of claret (Burgundy or California) may be allowed. Waters containing carbon dioxide must be prohibited, so also over exertion, bicycle riding, horseback, athletic exercises; the wearing of a well fitting suspensary becomes necessary. The *prima via* must be kept in order. This can be done to the best advantage by means of Epsom, Glauber or Rochelle salts. I believe in early internal medication. Cubebs, Copaiba, Santal oil, Salol, in large and frequently repeated doses. Pepsin added to the oils aids their digestibility. If much *chaude pisse*, Potassium Citrate, Bicarbonate, Acetate or homeopathic doses of Tr. Cantharidis can be used. Immersion of the penis in hot water during urination will prove a boon to the patient.

(In the acute posterior variety care must be taken with alkalies, as alkalinity of the urine favors the entrance of gonococci into the bladder, whilst acidity is the foe of these Neisserian gentlemen.)

If the case be a very acute one; rest in bed, ice bag to the penis, demulcent drinks: Decoctum Lini or Ulmus fulvæ, Tr. Opii Camph. Tr. Hyoscyami—decoct. uvæ ursæ or its active principle arbutin—salines, milk diet, etc., are indicated.

Absolute cleanliness, the use of the D. P. bag, or its equivalent, containing absorbent cotton. Above all forbid the use of cotton at the meatus. It is filthy; it may cause phimosis, para phimosis, balanitis, etc., but principally, it prevents the escape of pus and facilitates a posterior urethritis, orchitis, epididimitis, cystitis, etc.

Anti aphrodisiacs must be freely used: Potassium bromide, gr. XV, morning and evening. Chordee must be prevented,

as any flux of blood to the inflamed part increases the inflammation, not to speak of the pain. For this purpose we have full doses of the Bromides: Lupulin, Camphor, Opium, Camphor monobromate or, when Camphor cannot be tolerated, Ergotin (Bonjean), hot applications—never cold, for as soon as the effect of the cold has worn off we have a consequent congestion.

As regards injections: I never use them in the early stages until the burning has disappeared, which occurs in ordinary cases in from twelve to fifteen days. It is true a great many, and men of reputation, prescribe a syringe and injections the first time they see their patient, their remedies being Bismuth, lead, Bichloride of Mercury 1-30,000, very weak solutions of Silver nitrate etc. If the symptoms are intense, a lead-water and laudanum injection will to a degree quiet the inflammation. On the whole it is folly to hope to kill the gonococcus at an early stage unless, say, Silver nitrate injections be so strong as to destroy the epithelial cells and reach the sub-epithelial layers.

Within six hours after coitus, the gonococcus finds its way between the ephthelial cells into the subjacent tissue. The escaping pus is due simply to the activity of the microbe. As the pus cells wander out they carry with them the gonococci. After two to three weeks the epthelium (columnar) is cast off and squamous cells take its place. The covering having been removed, the squamous epithelium containing the gonococci being exposed, injections are indicated. Whether you use Zinc Sulphate, Bichloride of Mercury, Hydrastis, Alum, Tannic Acid, Cupric sulphate, Lead acetate, Hydrogen peroxide, Zinc or Potassium permanganate, matters not. Every one has his own favorite prescription. In order to prevent, as much as possible, the entrance of the injection into the posterior urethra, I have the patient, after partially urinating, sit on a pad placed just posterior to the scrotum. This occludes, at least partially, the posterior urethra. Then, after washing out the urethra by means of several injections of warm water, to remove any muco pus, follows the injection proper. Even if, in spite of our precaution, some portion of the injection should get into the bladder, the urine still remaining decomposes it. Among injections, the following may be mentioned.

Zinc Sulphate, gr. ss—$\frac{\cdot\cdot}{\text{ii}}$ to ℥$\frac{\cdot}{\text{i}}$; Cupric Sulphate, gr. ¼—$\frac{\cdot\cdot}{\text{ii}}$ to ℥$\frac{\cdot}{\text{i}}$.

Nitrate of Silver, the drug which seems to have a distinct action on the gonococcus, gr. $\frac{\cdot}{\text{i}}$ to ℥$\frac{\cdot\cdot\cdot\cdot}{\text{viii}}$.

Potassium or Zinc permanganate, gr. ⅛—$\frac{\cdot}{\text{i}}$ to ℥$\frac{\cdot}{\text{i}}$; Zinc Sulpho-Carbolate, gr. ss—$\frac{\cdot}{\text{i}}$ to ℥$\frac{\cdot}{\text{i}}$; Bismuth Subnitrate, gr. $\frac{\cdot}{\text{i}}$—$\frac{\cdot}{\text{vi}}$ to ℥$\frac{\cdot}{\text{i}}$; Hydrast. sulph. or Muriate, gr. $\frac{1}{20}$—ss to ℥$\frac{\cdot}{\text{i}}$; Tannic Acid, gr. ss—$\frac{\text{v}}{}$ to ℥$\frac{\cdot}{\text{i}}$.

Ultzmann's Injection, { Acid Carbolici.
Alumen Crud.
Zinci Sulphatis, āā gr. $\frac{\cdot}{\text{i}}$—$\frac{\cdot\cdot\cdot}{\text{iii}}$ to ℥$\frac{\cdot}{\text{i}}$.

These are some of the common injections, the others are, to a great extent, combinations of the drugs above mentioned. The strength of the solutions is varied according to the nature of the case. After the purulent stage, after the anti-climax has been reached, *i. e.*, after the thick greenish pus has changed to yellow, that in turn to white, that again to milk and water color and that finally to a clear and mucuoid discharge, the strength of the injection should be decreased and continued for a week after all discharge has ceased.

Allow the patient to rest for a week, then take exercise, indulge slightly in Baccho, and according to Finger (with due precautions) in Venere also. If no exacerbation, no relapse, after having examined several times the urine, *i. e.* mucus for gonococci, and the microscopial examination proves negative, then you can discharge your patient as cured.

(*b*) ACUTE POSTERIOR URETHRITIS.

Rest in bed, if possible. Opium and Belladonna or Belladonna and Iodoform suppositories, hot rectal injections. Internally, Boric or Benzoic acids in large doses, or Salol, Salicylate of Sodium gr. $\underline{\text{xv}}$. t. i. d. diluent drinks, free saline purgation. Relieve the pain, for by relieving the pain, you relieve the inflammation.

In the sub-acute stage Cubebs, Copaiba, Salol, etc.

If there exist hæmaturia: Ergotine, Tr. Ferri Chloridi, etc. After the very acute stage, use deep medication by means of

the Ultzmann syringe or the Diday method. The latter requires some explanation: Take a small, soft rubber catheter and pass it into the bladder; as soon as the urine commences to flow pull it forward until the flow ceases, then hold the catheter firmly and wash out the urethra with lukewarm water by attaching a syringe to the catheter. Always use glycerine as lubricant for catheter, as fatty (oil or vaseline) lubricants interfere with medication. Some use a two-way catheter, but there are several objections. In the first place the instrument is rather large and consequently painful, in the second place you wish your solution to come in contact with the mucous membrane of the whole urethra, not alone with the prostatic portions.

After thorough cleansing and allowing the water to drain off, inject your medicament. Some men use ten to fifteen minute irrigations with antiseptic and astringent solutions. I am in the habit of employing gr. ss—$\overset{\cdot}{\overline{|}}$ to ℥$\overset{\cdot}{\overline{|}}$ Zinc permanganate solutions, claret color. You may use any of the antiseptic and astringent agents. These injections, by either the Diday or Ultzmann method, are made every other day. In the interim the patient falls back upon the ordinary conical syringe. Some patients become quite adept in forcing part of the injection posteriorily, by means of an upward gliding pressure upon the urethra of the finger externally.

### (*c*) CHRONIC ANTERIOR URETHRITIS.

Solution of $AgNo_3$ 1—5%; Cupric Sulphate 5—20% or the Nitrate of silver or Cupric sulphate salve method, *i. e.* anointing a sound with the following ointment:

℞

Nitrate of silver, ½ to 1 part.
Cupric Sulphate, $\overset{\cdot\cdot}{\overline{|}}$ to $\underline{\overline{X}}$ parts.
Lanolin, $\underline{\overline{V}}$ parts.
Ol. Olivarum, $\underline{\overline{X\ C\ \grave{V}}}$ parts—M.

Are my usual remedies in combating this trouble, if strictures do not exist. Some use Resorcin, others strong solutions of Tannic acid or Permanganate of Potassium, etc.

It is in this variety especially that the urine contains "Fæden." A part of the "Bonjour" or good morning drop will give a beautiful picture microscopically: mucus, pus-corpucles, perhaps gonococci. If these "Fæden" occur in a clear morning urine, we can make up our minds that we have a localized trouble, and if skilled in endoscopy, it must be our endeavor to touch just these *loci* with our medicament; but if not, the syringe or the medicated sound must be our resource. These "Fæden" and a cloudy (non phosphatic) morning urine are indicative of a diffuse inflammation.

As regards stricture (which can be detected by the ordinary means or the urethrometer), be it a superficial small cell, or a deep connective tissue infiltration, I shall say but a few words, as this is a subject in itself. Usually, by proper slow dilatation with an Otis or Oberlaender Dilator (I use an Oberlaender), after having found the proper caliber of the uretha by means of the urethrometer, most strictures can be made to disappear. I rarely use sounds; they are instruments of torture, and (with the exception of perhaps a few cases) could be consigned to the museum. And the anguish of the patient! I can still hear the groans and see the anguish of the patients in Drs. White and Neilson's clinics in days gone by. I do use sounds in stricture cases below 15 caliber, as the Oberlaender Dilator starts at fifteen. When using sounds in order to do good, to dilate properly, in most cases a meatotomy is required. For, how can a number twenty-two stricture be influenced, if you have a number twenty meatus. Meatotomy should not be performed unless a urethrotomy is necessary, and unless the patient is so situated that he cannot be with you to receive the monthly after dilatation. As regards internal medication in chronic urethritis we have no drugs that can be relied upon. Ol. Terebinth. is lauded by some, others use Potassium-iodide to absorb any existing infiltrations.

### (*d*) CHRONIC POSTERIOR URETHRITIS.

What was said in the treatment of acute posterior urethritis can, to a certain extent, be applied here. Injections with the Ultzmann syringe or the Diday method again come in play.

Nitrate of silver solutions up to five per cent., Cupric sulphate solutions up to twenty per cent. If the patient gets along nicely under the silver treatment keep on with it. If upon urinary examination you find cloudiness, use Nitrate of silver and not Cupric sulphate until the urine has cleared up. Between injections (every third day) have the patient use irrigations with Zinc permang. The most powerful method of treatment is the salve method. The (lanolin, Ol. Olivarum, Nitrate of silver, gr. ⁘ — V̲ to ℥ ⁝ or Cupric sulphate, gr. x — XL̲ to ℥ ⁝) salve is injected in the posterior urethra by means of a special syringe. I have seen part of this ointment come away twenty-four hours after injection. The advantages of this method are consequently apparent. In spite of this method there are cases that do not get along nicely. Prostatic trouble is the cause. For this, cold water (at the temperature of the room) irrigations, with or without some astringent, are to be used. Cold water is thrown forcibly against the perineum for five minutes at a time, morning and evening; pressure by means of a sound is indicated. Internally Potass. iodide and Ergotin in full doses. Topical applications of Lugol's solution; Potassii. Iodidi., gr. V̲ — XXV̲ to ℥ ⁝ Iod. pur. gr. ⁘ — X̲ to ℥ ⁝ of glycerine and water.

It is true it may take months to obtain the desired results, but in this, as in all things, "Perseverentia omnia vincit."

## DISCUSSION.

Dr. Matlack.—As Blenorrhagia means an excessive muco-purulent discharge from the urethra or vagina, it would be important sometimes to distinguish between an infectious and non-infectious urethritis. The non-infectious resembles somewhat the infectious inflammation, but is never so severe, is not preceded by a period of incubation, and is caused by coming in contact with irritating vaginal discharges that do not contain the gonococcus, or the passing of septic instruments. While the treatment of chronic urethrites is chiefly local, the internal treatment should not be overlooked, as it is important to build up the general health, which will suffer, especially if it is a long standing posterior inflammation.

The best local treatment I know of is irrigation with a warm solution of potassium permanganate, 1 to 5000, using a fountain syringe with a Martin's urethral nozzle attached, letting the solution pass into the bladder if it is posterior, the patient passing it out as in urination. See that the

calibre of the uretha is normal, as the presence of stricture is an obstacle to recovery. For incipient stricture the sound has a good effect, but after it has formed complete division is the only permanent means of relief. It is also well to recognize the fact that any muco-purulent discharge is capable of communicating catarrhal inflammation to any woman, and by extension to the uterus, tubes and ovaries, of producing troubles which may require their removal to effect a cure.

DR. BUCKMAN.—I presume a few remarks on Gonorrhœal Ophthalmia will not be out of place in this connection. They certainly are *not* superfluous in the directions to the patient when beginning treatment for Gonorrhœa. I fear this is too frequently neglected by the physician. The patient should be warned of the danger both to himself and to those about him. This reminds me of a case that is interesting because of the manner in which infection took place. I saw the patient with Dr. A. H. Morgan about a year ago, I think. It was a child two years old, in a poor family, where several members occupied the same room. About three weeks previous to my visit the mother had given birth to a child. Some time before this the father had contracted Gonorrhœa, and some time after confinement, presumably, he had communicated it to the mother. In urinating they and the child all used the same vessel. The child, being small, fell into the chamber, and got Gonorrhœa, and subsequently Gonorrhœal Ophthalmia, from which, I am told, she finally fully recovered.

I think children usually are more tolerant of this disease than adults. One baby that I have seen had had Ophthalmia for several weeks, when he was first brought to the office, and although the lids were then so swollen that they could not be opened, he made a good recovery, with only one slight opacity on each cornea; while an adult whose eyes had been sore certainly less than ten days when she was first seen, was at that time hopelessly blind, with both corneæ entirely destroyed. Two other younger members of her family, from whom she contracted the disease, both recovered, one with good sight from home treatment, and the other with one eye fairly good.

There seems to be a tendency sometimes to make light of these cases. I know two persons who are blind, who had been told that there was no danger. "It was only a cold in the eyes."

I repeat that patients with Gonorrhœa should always be warned, and when Ophthalmia does appear it should be promptly and vigorously treated, and the patient informed of the danger of blindness in case of neglect, and sometimes in spite of the best and most skillful treatment.

DR. GUTHRIE.—I had under my care, some years ago, a case almost parallel to that just related by Dr. Buckman The father of my patient, during an extended absence from home, became infected, and after his return his wife contracted Gonorrhœa, and still later, their little girl, about three years old, contracted the same disease. We could not determine

how it was possible for the child to acquire Gonorrhœa except by means of the common chamber which was used by all three. I haven't the slightest doubt but that it was contracted in this way. It ran as an ordinary course of Gonorrhœa under treatment, but Gonorrhœal Ophthalmia developed of a severe type. This was treated assiduously and recovered, the father carrying out instructions very faithfully, as I had impressed upon him the dangerous nature of the disease. The mother also recovered, but as she was pregnant we awaited with some apprehension the birth of the child, lest another case of Ophthalmia should appear. Fortunately it escaped. The mother now has pus tubes as the sequel of her attack.

I second heartily all that has been said as to the importance of cautioning persons with Gonorrhœa as to the danger of infecting persons of the opposite sex, even in any stage of the malady.

There is loose teaching nowadays as to the nature of Gleet. Whether it be true, as some claim, that all pus tubes are gonorrhœal tubes, or not, we at least know that a large proportion of them are.

An ordinary case of acute Gonorrhœa usually gets well if not treated too much. It gets well if we see the patient early, but the trouble is that we get him too late, after he has gone the rounds of druggists, boys' prescriptions, &c.

It is of the first importance that the calibre of the urethra should be free. I believe the theory of Otis is correct and the narrow meatus should be opened, strictures should be dilated, and urethrotomy performed if necessary. These patients are usually in a reduced state and tonic treatment is necessary. For this I find nothing better than the old tincture of the chloride of iron.

As to Gonorrhœal Rheumatism, whatever may be its cause, I put but little faith in rheumatic treatment for its cure. Here again I find no other remedy equal to the chloride of iron, though Wyeth's Elixir of Gentian and Iron or other iron preparations are also useful.

The secret of holding the patient in this trouble is to charge him a big fee and make him pay it in advance, and he will always stay with you till he gets well.

# LEG ULCERS.

BY DR. F. P. LENAHAN, WILKES-BARRE, PA.,

READ APRIL 15, 1896.

*Mr. President and Gentlemen:*

In selecting leg ulcers as the subject of my paper I did so for two reasons—first, because it appears to be a subject avoided to a great extent by medical essayists and journals, and, secondly, because that, although a practitioner of but a few years' standing, my experience in treating this form of disease has been unusually large.

Leg ulcers may be divided into acute and chronic, according to course and duration. The latter may be subdivided into specific, tuberculous, malignant, and, finally, the class resulting from malnutrition, varicose veins, œdema of the leg, etc., the class usually referred to as the chronic leg ulcer. It is my intention, this evening, to confine myself to this latter class, and principally to its treatment, together with a citation of several cases that may prove of interest.

The chronic leg ulcer is usually found somewhere on the lower half of the leg, most frequently just above the malleoli, these latter being more exposed to injury. When it occurs about the upper half of the leg, inquire for a syphilitic history. It is found most frequently among the poor, ill fed and overworked portion of the population and those suffering from varicose veins and œdema of the leg. Its shape may be round, oval, or irregular. It is usually deep, with sharply defined, inverted, or everted edges. The granulations, when present, are apt to be exuberant and flabby, exuding a thin, bloody discharge, which is very offensive. When the granulations are absent, the surface of the leg presents a brick-red, glazed appearance, with scarcely any discharge. In the course of time, the exuded lymph about the edges becomes organized into connective tissue, which forms a dense embankment so compressing the blood vessels as to prevent healing. It is in the removal of this wall of connective tissue that we are enabled to bring about a cure. In the variety of ulcers accompanying varicose veins and œdematus legs, the edges of the sore are

soft instead of hard, the surface of the ulcer exuding a profuse discharge. In this latter form it is the varicose veins or the œdema, instead of the wall of connective tissue, that interferes with the proper blood supply.

There are various forms of treatment advised for this condition, but, in all cases which have come under my charge—about two hundred and fifty in number—I have followed but one line of treatment, with success in every case but one. The exception, however, was not the fault of the treatment, as I will explain later on. My mode of procedure is as follows: Apply hot linseed meal poultices for several days. Then strap and bandage the leg, according to the rules laid down by Baynton, with which you are all familiar. The secret of success lies in applying your straps firmly and evenly, and in getting your bandages on accurately and smoothly, exerting equal pressure throughout the leg. The pressure from the straps and bandages, while bringing the edges of the sore together, at the same time causes absorption of the wall of connective tissue, thus allowing a flow of arterial blood to and of venous blood from the ulcers—nature does the rest. If the ulcer be the result of varicose veins or œdema, the straps and bandages, by giving support to the one and removing the other, provide for the ulcer a supply of rich arterial blood, which will sooner or later effect a cure. The dressing should be changed and the sore bathed with a mild solution of permanganate of potash every second, third or fourth day, according to the amount of discharge. It may be necessary, at times, to stimulate the granulations with cupric sulphate or a 20-grain solution of silver nitrate. If the ulcerated surface is large, it may be necessary to resort to skin grafting, after the ulcer is filled with healthy granulations. Curetting or incision of the thickened edges I have never been obliged to resort to.

The point I wish to bring out is that by following the above line of treatment you can, I am firmly convinced, cure any leg ulcer, regardless of its extent or duration. All that is required is patience and care in applying the dressings. I have often worked on legs for weeks, and, on one case, for three months, without the slightest sign of improvement, to be at last rewarded

by the breaking down of the wall of connective tissue, and the appearance of healthy granulations. You may cure a leg in three or four weeks, or it may take you a year, or even a year and a half, as once happened me, but, if you will only stick to it, I promise you, you will bring about the desired result eventually. A year and a half seems a long time, but these are among the few cases in which your patients are truly grateful and willing to pay you liberally for the relief afforded. Another advantage in this treatment is that, while it may require some time to cure the sore, the patient is entirely relieved from pain and suffering after the second or third dressing. I have never found it necessary to diet my patients, but I do forbid alcohol. The patient does not even have to stop work during treatment. On the contrary, I have time and again sent patients to work after the first few dressings, who, previous to that time, had been unable to leave the house.

Now, a cure being effected, does the ulcer return? It will not return if you insist upon your patient wearing a silk elastic stocking after recovery. One of these stockings will last about six months. If varicose veins be present, he will have to wear the stocking for the rest of his life. If there be no varicose veins, wearing the stocking one or two years will suffice. I have never seen an ulcer return under these circumstances.

To illustrate the above remarks, I quote a few cases from my case-book:

S. P., Englishman, miner, 65 years of age. Thirty-five years ago he injured his right leg. It became sore and remained so for four years, when he entered a hospital in England and was cured. He came to this country shortly afterwards, when the sore broke out again, and never healed until seen by me. When I called upon him he was bed-ridden, and had been unable to work for five years, and had not left the house in one year. His leg was swollen to twice its natural size. From a point two inches below the knee to almost to the ankle, and extending fully two-thirds around the leg, was a foul, putrid sore, covered with large, bleeding, exuberant granulations, and very painful. The edges were a thickened wall, fully half an inch wide. The surrounding skin was of a dark, dull red color. The discharge was profuse, bloody, and of a horrible odor. The appearance of the leg was such that I thought it malignant. I started to treat it without much hope of success. After the third

dressing the old fellow was able to leave his bed and come to my office to have his dressing changed. The discharge was so great that I was obliged to renew the dressings every second day, and sometimes daily. I worked on this leg for three months without any improvement, except the removal of pain. At the end of this time the wall began to break down and healthy granulations to appear. At the end of a year and a half the leg was healed. The patient is wearing a silk elastic stocking. The leg has been entirely well for the past year, and the patient attends to his daily labor.

Mrs. H., aged 58 years. Twenty-eight years ago she fell down stairs, injuring her ankle. A sore developed above the inner malleolus. The ulcer was about the size of a fifty cent piece, and painful, with small pale granulations, everted edges, and thin, scanty discharge. After the first few dressings, pain disappeared. Ulcer was healed in nine months. Three years have passed with no return.

Mrs. R., 35 years old. Eight years ago developed ulcers on both legs, resulting from varicose veins. The ulcers were very deep, extending almost from knee to ankle and involving almost the entire circumference of legs. The edges were soft. I did not have more than two inches of sound skin to which to attach plasters. I first saw the case about four years ago. The patient recovered in about three months. She wore elastic stockings for two years, and thinking it no longer necessary, she, contrary to advice, discarded them. Within six months the ulcers began to return. I succeeded in healing them up again in a few weeks. Since then patient has worn stockings with good results.

Thomas E., miner, about 60 years old. About eighteen years ago he developed an ulcer on the inner malleolus on the right leg, and another above the external malleolus of the left ankle. First saw the case five years ago. Ulcers were then about the size of a quarter, the surface glazed, the edges hard and everted. Patient had been unable to work for the preceding two years. After a few dressings, he went back to work. Later on, long before healing occurred, the patient was obliged to walk five miles to his daily labor, yet the sores healed rapidly and were closed in ten weeks. There has never been a sign of return.

I might continue on thus, case after case, but the above will serve to bring out the fact, which I wish to impress upon you, namely, that all cases of leg ulcer can, with patience and proper care, be cured, and further, that they can be permanently cured. I never met with a failure except one. The exception was a case that insisted upon remaining saturated with whiskey. As long as I could keep the patient sober, so long would the healing progress, but as soon as he got on a spree, the granulations would break down and disappear.

## DISCUSSION.

DR. W. CLIVE SMITH.—The ulcers of the leg which attract our attention are the indolent, or callous ulcers, and the eczematous, as the other forms, as a rule, more readily respond to treatment, and do not go around from one physician to another. In the treatment of this disease, innumerable remedies have arisen, and the explanation of this is not difficult to understand, since in any disease that runs a long and obstinate course legions of treatments will spring up, each of which has done good in this or that case, and each of which has its champion. As a student I worked in one of the large dispensaries in Philadelphia, where leg ulcers were treated in large numbers, but only one plan of treatment was used, viz., strapping. If a case got well under the treatment all well and good, otherwise the patient would keep coming on for months, possibly years. The treatment was never changed. Now this seems all wrong. Each and every case should be treated peculiarly to itself. What may cure one may do no good at all to another. A most obstinate case may respond to the mildest treatment in a short time.

I have in mind several cases treated in this manner, viz: Case of young girl about twenty, admitted to the Wilkes-Barre City Hospital with ulcer about the size of a dollar on the inner side of foot about malleolus, of four years' duration. She had been under treatment all the time, but without success. She was put to bed, a flaxseed poultice was applied for about a week to the hard indurated edges of the ulcer, which were then cut down level with the healthy tissues, and incisions were made into the healthy surrounding parts. The center of the ulcer was curetted and allowed to bleed freely. Poultices were again applied for three days, and the same process was gone through again. It was then washed off with bichloride 1-2000, and powdered *acetanalid* was applied, and acetanalid was applied every third day for three weeks, at the end of which time the ulcer had completely healed, and the girl left the hospital wearing a rubber bandage, which she discarded two week after going out, and had had no return of the ulcer some months after. Another case, soon after, was treated in the same manner with acetanalid with similar good results.

A case of a woman about forty had an ulcer about size of a dollar on the inner side of leg. It had started ten years before, and resisted all treatment, till the treatment of poultices, and cutting down the tissues and the application of *aristol*, when it healed up and caused no farther trouble. One of the worse leg ulcers (eczematous) I ever saw yielded promptly to the treatment of an ointment of bismuth subnit. and salicylate soda, after having tried all other applications; while another, very nearly as serious, and covering more surface of the limb, yielded only to skin grafting.

I once saw an annoying and stubborn ulcer yield to the treatment of pressure by the application of a dusting powder, with tissue (rubber) paper, over which was placed a piece of tin extending near the edges, and

the strips of adhesive covering that; the combined pressure being very effective.

Vaughn reports a case in which an ulcer was cured after eight injections of a 2% solution of nuclein. I once saw a case, like many others, yield to treatment to a certain point, and no application could make it heal. After numerous and known remedies had been tried, nearly all of which had been successful in some case or other, in desperation I put in zinc oxide, and the ulcer healed perfectly.

So while strapping may cure, and from the many successes it has had is no doubt a good treatment, yet I believe in studying the case, and find the treatment and applications best suited to that case, for, as I have said before, the mildest cases will sometimes only yield to the most stimulating treatment, while the most obstinate will respond to some simple remedy.

DR. J. W. GEIST.—The few cases of leg ulcers I have had I succeeded in curing by strapping. Last summer, while in New York, I saw very many cases under Dr. Cole, who treated all these ulcers, whether eczematous, varicose or syphilitic by thorough curetting. I suppose, according to cellular pathology, the idea is to get rid of every particle of diseased tissue. After thoroughly cleansing with a carbolized solution they were dressed with moist carbolized gauze and firmly bandaged. If, after a number of dressings, points of sluggish granulations reappeared, these were again curetted, or, if very small, lightly touched with nitrate of silver or pure carbolic acid. This is perhaps too severe treatment for private practice, yet may serve us well when other methods fail.

DR. FARRELL.—In my experience in treating these cases I have placed the treatment in the hands of each patient, giving special directions as to the necessity of elevation and relaxation, having them treat each ulcer night and morning hygienically and afterwards with bichloride solution 1 to 1000, or a 2% sol. of carbolic acid, directing moderately tight bandaging, and giving at the same time an internal treatment of elix. quin. ferri et strych., having the patients come to my office once a week for examination. I have not practiced strapping with adhesive plaster, but simply bichloride gauze with tight bandaging,

DR. HILEMAN.—In treating leg ulcers I have abandoned the practice of strapping, for usually the patients have been thoroughly treated in this way by other physicians. Of late I have treated some four cases by means of methyl violet, applying an ointment of 1 to 200 to 1 to 300, and have had excellent results. My attention was called to this treatment by seeing cases of carcinoma reported that had been treated by this drug.

DR. W. H. FAULDS.—*Mr. President:* The essayist has certainly had an unusually large experience in the treatment of leg ulcers, and judging from the results obtained, his treatment has been very satisfactory. However, it seems to me that in some of the cases reported recovery might

have been more rapid under strictly antiseptic treatment. In these cases whenever the vitality of the tissues is lowered below a certain point, either by mechanical obstruction to the circulation, or because of some constitutional defect, the tissues present a favorable soil for bacterial invasion, and we have as a result an infectious ulcer; and I believe the more nearly we adhere to antiseptic treatment the sooner recovery will ensue. The first part of the treatment, then, is to render the ulcer aseptic. This may be done by the application of pure carbolic acid or peroxide of hydrogen. The next step in the treatment is to destroy the pus-secreting membrane; and perhaps the best instrument for this purpose is the curette. Some advise the use of a stiff bristle brush. At the same time the edges of the ulcer should be freely incised, and the whole surface gone over again with peroxide of hydrogen or bichloride of mercury. We are now supposed to have an aseptic surface, and the object of the subsequent treatment is to keep it so, and at the same time to restore the normal circulation. This is accomplished by filling the ulcer with iodoform, boracic acid, or acetanalid, as advised by Dr. Buckman. Over this place a piece of rubber tissue, and over all a stockinette bandage. This bandage I believe to be superior to all others in the treatment of leg ulcers. After the ulcer has healed nothing will prevent a return of the trouble like a well-fitting elastic stocking, such as has been advised by the essayist.

Dr. Delbert Barney.—I have but little to add in this discussion, for my method of treatment has been identical with that of the essayist. I have seen many of his cases and can vouch for the efficacy of the treatment. It seems to me that the first point to be gained in dealing with this class of patients is the removal of a superstitious dread they have that if the ulcer heals entirely some other and more direful calamity will befall them. Under this belief they are content to let a sore run on for years if only it can be kept from paining them too much. Anything that will soothe the pain they consider good medicine. Thus they drift on from year to year, and from one doctor to another. Physicians do not like to handle these sores, and too often they too are easily satisfied when the troublesome symptoms are allayed and the patient asks for no more. To effect a cure patience and constant attention are demanded. These, with the detailed treatment of the essayist, I believe will succeed every time.

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The President, Dr. Chas. Long, reported the following case of

STONE IN THE BLADDER:

Mrs. F. M., age 74, has been suffering from symptoms of renal colic for, at least, three years, during two of which she

has scarcely been able to leave her house, and says she did not know what it was to have a night's rest on account of pain and frequent micturition, sometimes as often as every fifteen minutes.

I have been attending her since December, 1895, and during that time she has passed several small calculi, and gives the history of having passed such during her entire sickness. The attending cystitis and the pressure of the calculi have increased all her symptoms, and having recognized the presence of a cystic calculus, I, at last, obtained her consent to operate.

April 14, 1896, patient was etherized, and bladder washed out with a boracic acid solution (ʒ$\frac{i}{i}$ to Oi). The urethra was then stretched to the required extent, first by small uterine dilator, then by the little finger, then by the index finger. It was then possible to explore the interior of the bladder, and I found that the mucous membrane had undergone a chronic inflammation, followed by hypertrophy of the muscular coat, the fibres forming ridges or rugae on the inside, causing the whole interior of the bladder to be saculated in which small calculi could lodge. In one of these I could detect a stone about the size of a nutmeg. Attempts were then made to extract it by means of a small pair of forceps, but it was impossible to grasp the stone with them, and likewise, the attempt to crush it was a failure, because it would invariably lodge in one of the pouches and the lithrotrite would grasp the mucous membrane of the bladder instead of the stone and make the attempt dangerous. Then I attempted to remove it by placing the forefinger of one hand in the bladder, and a finger of the other in the vagina, but owing to the size of the stone in comparison to the urethra, and the numerous ridges of the bladder, and the inconvenience of using both hands, it was found impossible to remove it in that way. I then found, by still keeping the forefinger of my right hand in the bladder, and placing the thumb of the same hand in the vagina, I could obtain a firm grasp on the stone, and so lift it out of its pocket and force it through the urethra, as I did, having here a phosphatic stone weighing sixty-two (62) grains.

# ABSCESS OF THE CEREBELLUM,
## (WITH REPORT OF A CASE).

BY DR. CHARLES LONG, WILKES-BARRE, PA.

MAY 6, 1896.

*Mr. President and Members:*

I present for your consideration this evening the following history of a patient, hoping that its recital may prove as interesting to you as watching the progress of the case did to me:

John Peach, slav, age 27 years, laborer, single, came to us complaining of intense headache and dizziness. His family history is unknown, and he could give us very little information concerning his past history. I can, therefore, only give accurate account of what we, ourselves, observed of him.

He first came under my care on April 1st, 1895, having been admitted into the hospital on March 23, 1895. The treatment up to date had been potassium bromide, and gradually increasing doses of potassium iodide, starting with gr. $\overline{\text{xii}}$ and increasing to gr. $\overline{\text{xxv}}$, three times a day. As before stated no information could be obtained regarding his family history, or of his history prior to entering the hospital; but a careful examination of the ears showed perfect membrana tympani, and therefore excluded chronic suppurative middle ear disease, or mastoid disease as a predisposing cause, nor could we obtain the history of any injury to the head or previous prolonged sickness, specific or non-specific as a probable cause.

About the beginning of March he commenced to complain of severe headaches, occasional vomiting, and also of attacks of dizziness, and says that he could not stand alone or walk without support. His condition gradually grew worse and he was admitted into the hospital. On examination we found him a strong, well built man, somewhat emaciated, skin pallid, tongue heavily coated, lying generally upon his back with his head drawn back and buried deeply in the pillows. With the imperfect history already obtained and the position observed, the natural diagnosis would be that of some brain disease. His mind was clear the greater part of the time, but

often he was in a semi-conscious or sluggish state. The symptoms observed were:

1. *Headache.* This was violent, and while not localized, was always most severe over the occipital region, where there was also tenderness on pressure. The headache was almost constantly present during the sickness, and was so intense that patient slept only under the influence of narcotics.

2. *Vomiting.* There was almost daily vomiting of food. The patient would vomit without any warning or *previous nausea*, and generally immediately after taking food or medicine. The vomited matter would be propelled from the mouth with considerable force and was generally of a fluid consistency.

3. *Vertigo.* If the patient would raise himself from the horizontal position or be raised passively, he would immediately have an attack of vertigo and complain of not being able to see. This apparent blindness would last from ten to fifteen minutes.

4. *Gait.* Only once was I able to get the patient out of bed to observe his method of walking. His gait was a staggering one, not with any loss of muscular co-ordination. He would always stagger in an irregular arc of a circle toward the *right* and would have fallen if he had not been supported by the nurse.

5. *Muscular Weakness.* There was no paralysis or paresis of motion or sensation observed in any of the muscles of the body, but there was a decided loss of muscular power due probably merely to weakness, and also occasional muscular tremors. The tendon reflexes were normal, except in one examination, during the latter stages of the disease, when they appeared to be absent entirely.

6. *Convulsions.* The patient had almost daily convulsions, and at times as many as three in one day, lasting from five minutes to one hour in duration. He also had occasional attacks of *syncope.*

7. *Optic Neuritis.* Excepting sight, the *special senses were normal.* The right pupil was generally slightly dilated; strabismus was almost always observed directly after a convulsion, and the patient would sometimes complain of diplopia. Dr.

L. H. Taylor reported, as a result of ophthalmoscopic examination, a severe *optic neuritis* with hemorrhagic extravasations in both retinae. Then, as before observed, the patient would complain of being totally blind after some of the convulsive attacks.

8. *Pulse.* Auscultation and percussion showed the heart and lungs normal. The pulse was full, regular and slow. It ranged from 54 to 96 in the minute, generally being about 60.

9. *Respiration.* The respiration was always slow, averaging twelve (12) in the minute. Once, after an attack of *syncope*, it remained at four (4) in the minute for more than an hour.

10. *Temperature.* On admission the temperature was 96° F., and was, at most times, slightly below the normal. On only four occasions during the treatment did it rise above the normal, the highest point being reached two (2) days before death, when it was 101° F.

11. *Urine.* Sp. gr. 1028, neutral in reaction. No albumen or sugar. Contained a large amount of phosphates. Bladder acted well, but bowels were constipated and would act only after a purgative or enema.

The *diagnosis* was disease of the *cerebellum*, either *tumor* or *abscess.* The symptoms all grew gradually worse, and the patient *died suddenly* on May 20th, 1895.

Excepting that iodide of potassium was given for its specific effect, the treatment was symptomatic.

*Post Mortem.* Man, 5 feet 8 inches high; weight, about 150 pounds. Somewhat emaciated. Lungs, heart and all the abdominal organs were found normal.

*Brain.* The blood vessels were slightly injected through the whole meninges of the brain, but there were no adhesions or decided meningitis. Transverse and longitudinal sections were made through the cerebrum, but no abnormal condition could be found. The cerebellum, however, was more interesting. The left side was firm and apparently normal. The right side was almost totally destroyed and occupying its place was a large *pus sac*, filled with thickened, cheesy pus, which was not of fluid consistency, and which would not flow out when the abscess sac was opened.

The following is Dr. Knapp's microscopical report of the case:

*My dear Dr. Long:*—The following is the note I made after examining Peach's brain:

Specimen consisted of brain and membranes in alcohol, marked "Peach's Brain."

On removing from jar and placing on table a large quantity of pus escaped from the under surface, and there was a heavy deposit of pus at bottom of the specimen jar. The cerebrum and its membranes on gross examination and on section showed nothing abnormal save a slight enlargement of the vessels. The cerebellum was several shades lighter in color than usual, and was soft. There was a ragged hole 1 cm. in diameter on the under surface of the right side; upon enlarging this I found that a greater part of the white substance of this side was an abscess cavity, the lining of which was softened cerebellar substance; vertical section through this side showed no white substance save about 1.5 cm. anteriorly, the remaining portion of this side being gray matter. Section through the incisura from before backwards, including the medulla and fourth ventricle showed that the abscess was confined to the right hemisphere of the cerebellum.

Cubes .5 cm. were taken from four different points of the wall of the cavity, washed in water, hardened in Muller's fluid, and mounted in celloidine and cut. Sections stained with borax-carmine showed an infiltration of leucocytes for about .5 mm., then apparently normal substance. Stained by the modified Pal-Weigert method, and by aniline blue-black, the granular layer was little changed, the stratum of cells of Purkinge were here and there visible, and the scattered cells and neuroglia of the outer layer showed well.

It is a case of abscess of the right hemisphere of the cerebellum. Beyond the cavity of the abscess the brain substance is very little affected.

No examination was made of the cerebrum.

Sincerely, CHARLES P. KNAPP.

If we analyze this case we find severe headache of the bursting variety, vertigo, constant vomiting without nausea, and optic neuritis. These are the four *main* symptoms which would lead us to diagnose intra-cranial tumor or abscess. There was no paralysis or paresis, no disturbances of the special senses except that of sight, and no active delirium or tendency to coma, which would indicate cerebral disease. The staggering

gait, the muscular tremors and weakness, the convulsions and the strabismus, combined with the four symptoms already noted, would certainly lead to the diagnosis of cerebellar disease. Inasmuch as there was no history of injury, suppurative ear disease, specific or infectious disease, it was a difficult matter to decide between abscess and tumor of the cerebellum.

### REMARKS.

It is not my purpose to give you a history of the physiological experiments made upon the cerebellum of animals, but rather, in this short paper, to detail the results of those experiments. Krauss, in the *New York Medical Journal*, Vol. LXI, No. 22, draws the following conclusions:

1. That lesions on one side of the cerebellum produce symptoms on the corresponding side of the body.

2. That after partial removal of the cerebellum, muscular weakness follows, which disappears almost entirely after a few months.

3. That after the complete removal of the cerebellum in animals, the movements of the lower or inferior extremities become entangled, and they refuse to obey the impulses which guide their action.

4. That the cerebellum has some function over the regulation of muscular movements, either coördinate or compensatory; the weight of opinion seems to favor the former.

5. That lesions of the middle lobe seem to affect both sides of the body, while lesions of the lateral lobes or peduncles affect the corresponding side of the body only.

To summarize then: According to the majority of observers, the cerebellum as a centre presides over the coördination of muscular movements, the effects of which would be to maintain the equilibrium of the body, the guidance of locomotion, and the maintenance of body-station.

These definite points have all been decided for us by the experiments of *Luciani*, to whom we are indebted for all our present knowledge of the physiological action of the cerebellum. He has also decided for us what actions the cerebellum does not control—that complete extinction of the cerebellum

produces neither partial or general paralysis of the mind, perception, volition, intuition, muscular movements, or the appetites.

Now, if we compare the results of the physiological experiments with the clinical aspect of cerebellar diseases we find that the former are excellent guides in the diagnosis of these diseases. Krauss has collected ninety-seven cases of authentic cerebellar disease and has also reported three cases of his own. All of these one hundred cases were diagnosed during life, and from them was established a certain set of symptoms which might be termed typical of diseases of the cerebellum. Ten of these hundred cases were abscesses of the cerebellum.

*Headache* was present in 83 cases, absent entirely in 6 cases, and its presence or absence was not reported in the rest.

*Vomiting* occurred in 69 cases, was absent in nine cases, and not reported in 22 cases.

*Optic neuritis* was present in 66 cases, absent in 12 cases, and not reported in 22 cases.

*Vertigo* was present in 48 cases, absent in 9 cases, and not reported in 43 cases. As before stated, these four symptoms are pathognomonic of intra-cranial disease.

Of symptoms distintly cerebellar, *occipital pain* and *tenderness* were present in 45 cases, doubtful in 39 cases, absent in 8 cases, and not reported in 8 cases.

*Ataxia*, or disturbance of motion, especially of the inferior extremities, was noted in 58 cases, absent in nine cases, and not reported in the others.

*Asthenia*, or lack of sthenic power in the muscles as evidenced by weakness, was present in 48 cases, absent in 14 cases, not reported in 38 cases.

*Convulsions*, either partial or general, was present in 38 cases, absent in 14 cases, and not reported in the others.

Inclination to stagger to one side or to the other has sometimes served as an index for determining the lobe affected, but the results of the examinations were not sufficient to decide this point. It may be said with some degree of certainty, however, that the patient moves from the well to the diseased side, and the case just reported would indicate that this is true.

*Tendon reflexes* were normal in *ten* (10) cases, exaggerated in 12 cases, diminished or absent in 12 cases.

The *sudden death*, so often observed in cerebellar disease, and which occurred in the case reported, may be due to the effects of pressure upon the nucleus of the vagus nervus.

## DISCUSSION.

DR. WEISS.—The essayist covered the ground thoroughly, and as he has virtually limited the subject to the symptoms and diagnosis of Cerebellar Abscess, it leaves but a narrow field for discussion. In taking up the subject I can do no more than affirm what the essayist has said. I have had no practical experience in treating cerebellar abscess; at least none in which I was able to confirm the diagnosis after death by a post mortem examination. Referring to the symptoms, muscular incoördination is the most constant and prominent symptom of cerebellar trouble. There is no actual loss of muscular power or paralysis, but a want of power to move at will the limb at the proper time in the right direction, and the patient, when walking, has the appearance of being intoxicated. In walking the patient is apt to walk in a circle, swerving from the sound to the affected side. I had a patient under observation for some time that was suffering from some cerebellar trouble, probably tumor, in whom this symptom was prominent. The patient would start for a point, swerve from his course and nearly walk a half circle, then stop, turn and start for the point again. In this manner he would walk a succession of half circles until he reached the point. This patient had also difficulty of speech. He knew what he wished to say, but could not always readily find words to express his thoughts.

It is not always easy to make a diagnosis of cerebellar trouble. Cases are recorded where, upon post-mortem examination, abscess of the cerebellum was found, and yet the patient had never shown any symptoms that would lead one to suspect cerebellar trouble. If we study the apparent and deep origin of the cerebral nerves, their course within and exit from the cranium, and the functions of parts supplied by the nerves, and then note and study the nervous disturbances, we can nearly always form a fairly accurate diagnosis of the character and location of the trouble.

DR. W. H. FAULDS.—I do not rise to discuss Dr. Long's very interesting and instructive paper, but to relate a case of cerebral abscess which occurred in my own practice, the clinical history of which is, perhaps, unique. Mrs. G., aged 36 years, expecting every day to give birth to her tenth child, consulted me for deafness of the left ear, and very severe pain in the head. The deafness, which she first noticed about two months previously, had gradually increased until now, in that ear, it was almost complete. The pain, at first not so severe, was now so intense that she would not ride from my office to her home, a distance

of about one mile, because, as she expressed it, the noise of the electric car made her almost crazy.

This was December 11th. I saw her next day at her home, and again on the 13th and morning of the 14th. At each of my visits she was cheerful, and had no symptoms pointing to intra-cranial trouble except the deafness and pain in the head, the latter not now so severe as when she consulted me at my office on the evening of the 11th. She passed the day of the 14th comfortably until about 6 o'clock P. M., when she complained of labor pains. An hour later the labor pains had increased, as had also the pain in her head; it being now so severe that she asked her husband to press her head with both hands, at the same time saying that the pain would drive her crazy. She soon became delirious, and at 8 o'clock P.M., when I arrived, she did not recognize anyone, but was very restless, throwing her arms and legs, exhibiting that kind of restlessness we sometimes see between attacks of puerperal convulsions. During this time the os was dilating, and part of her uneasiness seemed to be due to labor pains. Thinking that her labor was aggravating the head trouble, whatever it might be, I determined to terminate her labor as speedily as possible. In half an hour the head of the child was well down in the pelvic cavity (she had always had an easy time in labor), and the pains were expulsive in character. Just at this time I noticed a blueness of the countenance and failure of respiration, which for a moment made me think of a puerperal convulsion. But instead of a convulsion respirations ceased for about 15 seconds, when they again returned and the countenance resumed its natural color. In a few minutes the same symptoms returned and respirations again ceased for about the same period. I then prepared my forceps, intending to deliver at once. But just as I was about to apply them the countenance again became livid, respiration ceased, as before, but for a longer time; cold water was dashed on the face, and artificial respiration resorted to, but all in vain—the woman was dead. This was the first woman I had ever seen die in labor, and you may imagine my feelings. After a few minutes I recovered myself, and proceeded to deliver the dead woman of her child, which was accomplished quickly and easily.

Fortunately the husband consented to a post-mortem, at which Drs. Knapp, Fell, Thomas and Weida were present. On examining the brain, the first abnormal condition noted was a small quantity of pus at the base of the brain and in the region of the medulla oblongata. Closer examination revealed an abscess, as large as a medium sized orange, in the left anterior hemisphere, just above the left ear. This had ruptured, probably during a labor pain, which would account for the pus found at the base of the brain, and for the paralysis of respiration which was undoubtedly the immediate cause of death.

I am unable to give an opinion as to the cause of the abscess. There had been no discharge from the ear or history of ear trouble, and the post-mortem revealed no disease of that organ. The body retained its natural warmth, and the radial pulse could be felt until respiration ceased.

# GOITRE.

BY DR. T. A. JAMES, ASHLEY, PA.

READ MAY 20, 1896.

The most frequent affection of the thyroid body is chronic enlargement, hypertrophy, or goitre. But under this head are included several morbid changes all allied to one another in being developments of the natural component tissues of the organ. In its severer forms goitre is endemic. It prevails, to a very great extent, in the chalky parts of England, in the valleys of the Alps, in the Apenines and Pyrenees. It has been said that in Savoy, Switzerland, the Tyrol, and Carinthia, there are villages in which all the inhabitants, without exception, have these swellings. The cause which is commonly assigned, viz., the use of water impregnated with calcareous or earthy deposits, is unsatisfactory, as it has been proven that in some countries where the water contains much lime there are *no* cases of goitre.

Dr. John Webster says, that according to information collected from reliable sources there are 500,000 goitrous persons in France alone.

Goitres can be said to be divided in five distinct classes, fibrous, follicular, cystic, vascular and exophthalmic. Treatment of goitre may, in general, be said to consist of drugs administered externally and internally, or by means of some surgical operation. The choice of treatment, must, of course, be determined by the size, form, situation and variety of the tumor, as one form is often amenable to a plan of treatment which would prove utterly useless in another. In fibrous goitre the enlargement will be hard, resisting and knotty. The follicular, in its early stages at least, will be soft and yieiding. Cystic goitre is soft and presents, in certain situations, distinct fluctuations. The vascular variety, formed by the enlargement and hyperplasia of the blood vessels, either arteries or veins, is soft, compressible and elastic. In exophthalmic goitre one lobe is usually larger than the other. At first the gland is soft

and elastic to the touch and becomes firmer and harder as the disease progresses.

So much for symptoms. Let us now, for a few moments, consider the different successful methods of treatment. In all varieties of goitre, iodine and its various preparations have been largely used internally and externally, and the testimony of its curative value is strong. On the other hand, however, it has signally failed very many times, and the recorded cases of successes and failures indicate that it is of value only in the fibrous and follicular varieties and in the early stages of the disease. Local applications either in the form of ointments or by hypodermic injections, will help considerably. Frequently the efficacy of an ointment can be increased by the application of pressure to the gland, but in the majority of cases this local treatment will accomplish little more than a slight reduction in the size of the tumor, and injection may, at this time, or even earlier, be resorted to with more hope of success. Yet, this mode of treatment will also frequently be more or less of a failure in effecting a complete cure. It is more apt to be of service in follicular and cystic rather than in fibrous goitre. Iodine, ergotin, iodoform, perchloride of iron, and solutions of arsenic have all been used with asserted success. Iodine, of course, ranks foremost in cases of follicular and fibrous goitre. Ergotin, by injection, has given good results, having been used successfully by Da Costa, Pepper and others. In the vascular variety of goitre, or when rich in the blood supply, ergot, administered in ten to thirty drop doses of the fluid extract, is useful.

The successful treatment of goitre by electricity is confined to the use of electrolysis by galvano-puncture. That electrolysis is curative in some varieties of goitre is unquestionable, and it is equally true that it sometimes utterly fails. It will be most useful when employed for goitres of comparatively small size, that is in the early stages of their growth. Another method of treatment is that which aims to cause atrophy and gradual disappearance of the tumor by ligature of the nutrient arteries. The difficult character of the operation, the danger of injuring the sympathetic nerve, and the usual establishment

of an extensive collateral circulation, have made it a question, to most surgeons, whether much is to be gained by this method of treatment. It is not suitable for cystic and fibrous goitres, and should be reserved for cases of early follicular or vascular tumors. When the tumor is very large, involving the whole gland, division of the isthmus will frequently relieve the dyspnœa, mechanically the two halves of the tumor being thus separated. Mr. Berry believes that it more often relieves the respiratory difficulty by draining the gland of its colloid secretion, and that while the relief afforded may be permanent, the goitre frequently returns when the wound has healed and the secretion is again pent up in the gland. Urgent dyspnœa has often not been relieved quickly enough, and in some cases tracheotomy, or the removal of a large portion of the gland, has been necessary. The complete removal of the thyroid body is generally unjustifiable. Partial extirpation has, however, been attended with such success as to give it a definite and meritorious position in the surgery of the thyroid. It includes the removal of one lobe, resection of the chief part of one or both lateral lobes, and resection of the intervening portion of the isthmus between two ligatures. When the goitre is uni-lateral the removal of the enlarged lobe is indicated. Although constitutional treatment of the character outlined, when discussing follicular and fibrous goitre, has been resorted to in the cystic bronchecele, it has invariably been a signal failure. The only possible benefit to be derived from drugs is in the form of injection. When the cysts are multiple and thick walled the process is tedious; repeated injections, or as recommended by Agnew, it may be necessary to break up the separating walls of the cyst by a plunger so as to favor the diffusion of the drug used. In a single cyst with thin walls puncture, followed by injection, is usually curative. The cyst is tapped at its most dependent part with a trocar. After the contents escape a solution of perchloride of iron is injected and allowed to remain for three or four days, the canula having been corked and kept in position by a tape passed round the neck.

I was called to see Mrs. D., aged 55; found her suffering from

a large cystic goitre. Dyspnœa was so great that she was unable to attend to her household duties. I tapped the cyst with a trocar and drew off a large quantity of fluid. After the removal of the trocar there was still some enlargement of the throat and considerable discharge from the cyst for several days. However, after the second tapping, some days later, the adhesion being broken up, there was no recurrence of the cyst.

Jane S., aged 28, single, first noticed a swelling in her neck about ten years ago. During the last six years she had a certain amount of dyspnœa while walking fast or going up and down stairs. Her voice first became affected five or six years ago, and during the last four years it had remained in much the same condition. During the last year the cyst increased so much in size, that for that period she was unable to wear a collar. The cyst being tapped fully twelve ounces of dark brown fluid was withdrawn.

Mrs. F., aged 40, first noticed the enlargement in her neck about nineteen years ago. The goitre was then about the size of a hen's egg. For several years it did not increase much in size, but about six years ago the swelling began to enlarge and continued to increase slowly. She was married three years ago, and was confined ten months afterward; a marked increase in the size of the tumor being noticed after the birth of the child. During the three months previous to the tapping of the cyst the increase in the size had been so great that she had been obliged to enlarge her dress nearly every week. The insertion of the trocar allowed the escape of a large quantity of fluid.

Dr. E. Fletcher Ingalls of Chicago has reported eighty-seven cases of bronchocele and exophthalmic goitre treated by him in the past fifteen years. During the last three or four years he had used thyroid preparations of various kinds, and in his last six cases desiccated thyroids. Six grains of this preparation represent one entire gland. He had obtained reports from other physicians, and was able to report on fifty cases in all. In a series of twenty-five cases all but seven showed improvement. Out of the fifty cases the size of the neck was considerably diminished in thirty-eight. Unpleasant effects, such as trembling, weakness, back-ache, nausea, loss of weight, were noticed, and in one case uterine contraction, which was directly

traced to the effect of the remedy. He drew from his study these conclusions:

1. The desiccated preparations are the preferable mode of administration.

2. Internal administration offers as good results as hypodermic use.

3. The effects are not constant in different patients, nor are they at all times in the same individual.

4. In exophthalmic goitre the gland is decreased in size, but rapidity of cardiac action may be aggravated instead of benefited.

5. Cystic goitre does not seem to be benefited.

It is said that in the use of desiccated thyroids the younger the patient the more likely to be benefited.

Thus all Dr. Ingall's cases in the first decade of life were cured. Of those in the second decade seventy-five per cent. were cured. Then the recoveries rapidly diminished as the age increased, and of the cases over forty scarcely any recovered.

DISCUSSION.

DR. JAMES W. GEIST.—I am sorry I missed hearing the major portion of the paper. However, I will give you some ideas I gleaned on the subject. Simple cystic and exophtalmic goitre are possibly manifestations of the same original cause acting under different conditions. Experiments with thyroid extract have given us good reasons to believe that the complex symptoms of goitre are brought about by changes in the secretions of the thyroid gland, either qualitative or quantitative, or both, and not, as was once supposed, by pressure of the enlarged gland upon the vagus or sympathetic or appreciable lesions in the brain or cord.

The classical symptoms, tachycardia and enlargement of the thyroid gland, have been artificially produced in healthy animals by the injection of thyroid extract; but all the symptoms disappeared on stopping the injections. So the ultimate in the chain of causes is still beyond our ken.

In all fatal cases these structural changes have been found: enlargement of the superficial veins, in the early stages alteration of the epithelium lining the spaces from a cubical to a columnar type, and a greatly increased proliferation of the tubules and epithelium.

Greenfield concludes that these changes represent a true hyperplasia, indicating an exaggerated and probably perverted function. There are those who claim that some cases of goitre can be cured by thyroid extract, especially the younger cases. Dr. H. C. Wood says he is sure it does harm. In a pronounced case of exophtalmic goitre in his care there was an injury to the spleen, followed by an abscess, which was opened, and after a month of severe illness recovery occurred. In the second or third

week the goitre began to diminish, and by the fifth week it had disappeared, and since recovery the goitre has not returned. After this he used splenic extract in three cases of goitre, with an apparent cure in one and great benefit in the others.

Kocher, who has operated in 1000 cases, found that in his first 100 cases, where he removed the entire gland, myxedema followed. Now, the contrast between the symptoms of goitre and myxedema seems to point to the fact that myxedema is caused by the lack of the ferment or principle contained in the thyroid secretion. In goitre we have enlargement of the thyroid, in myxedema atrophy. In one the skin is warm, soft and moist, in the other cold, hard and dry; in the one perspirations are often profuse, in the other absent even in warm weather. In goitre there is a tendency to pyrexia, in myxedema the temperature is subnormal. In the former we find palpitation and tochycardia, in the latter a slow pulse and sluggish heart. In goitre the patient is irritable, in myxedema dull. Many cases of goitre are made worse by thyroid extract, whereas all cases of myxedema are improved if not cured by thyroid extract. In myxedema very large doses must be given at first to bring about a cure; afterwards small doses are continued indefinitely to prevent recurrence.

At present the value of all treatments for goitre, whether medical or surgical, depends upon our ability to diminish the volume or lessen the functional activity of the thyroid gland. An operation should be done only after all therapeutic measures have failed, and then, if possible, by some one who has had great experience. Of the two operations, Kocher advises ligation of thyroid arteries in preference to partial thyroidectomy because of its greater safety. Notwithstanding his great success, Kocher entertains the hope that some treatment other than surgical may yet be found.

Dr. C. W. Prevost.—Goitre is an enlargement of the thyroid gland not due to malignant tumor or inflammation. One of the causes not advanced by this essayist is the carrying of heavy weights on the head; while of the many causes advocated none seem satisfactory to explain the pathological condition. Treatment by the thyroid extract, advocated by many observers, does not seem to be founded on a rational basis, if the theory of the pathology be correct, and Dr. Allen M. Starr says it is a dangerous remedy. Starr advocates belladonna to physiological action to act on the secretions. Also the glycero-phosphate of sodium in twenty grain doses three or four times day. Also absolute rest of body and mind. Surgical interference may be resorted to when the tumor enlarges to such an extent as to produce pressure and endanger the patient's life. The results are not very gratifying, in that many cases die immediately after operation. This is supposed to be due to absorption of fluid from the tumor. Complete extirpation of the gland is not to be resorted to, as it may bring on cretinism. The most rational treatment seems to me is to arrest the secretion or remove a portion of the gland.

# DIPHTHERIA AND ITS TREATMENT BY ANTITOXINE.

DR. J. T. HOWELL, WILKES-BARRE, PA.,

MAY 16, 1896.

On January 21st, 1896, was called to see a family consisting of seven children, five of whom eventually were afflicted with diphtheria.

At my first visit I found Grace, aged two years, and Harry, aged nine years, ill with the disease. In the case of the younger child the membranes covered tonsils, pharynx, and invaded the nose. I gave the mother an unfavorable prognosis, but began treating the child in my usual way, with Potas. chlorat., Tinct. ferri chloride, Tinct. acon. rad., in glycerine, and Syr. aurantii, at the same time spraying the throat with a solution of Carbolic acid, Listerine and Peroxide hydrogen, in Lime water. The second day I injected 600 units of antitoxine. The child made a good recovery, the membrane disappearing on the fourth day.

The boy (aged 9) was given the ordinary treatment; the membrane in this case being chiefly confined to the tonsils. Fifteen days later, February 5th, Joe, aged 4, and Jennie, aged 6, developed severe cases of the disease; the membranes covered the tonsils, pharynx, and invaded the nose. I injected the same day 600 and 1,000 units of antitoxine, respectively, spraying the throat and nose, and giving internally Elixir Gentian with Tinct. ferri chloride, which comprised the treatment in these two cases. They made good recoveries, except Jennie, who was afflicted with paralysis of the throat. One child, aged 11, was immunized with 600 units of antitoxine.

On February 27th, this year, I was called to see Howard M., aged 4. Temperature was 104°, pulse 120. Membranes covering tonsils and uvula, also having a serous discharge from the nose. Within six hours I injected 1000 units of antitoxine, and put him on the chlor. of potash and iron mixture, with the spray for the nose and throat. The membrane all

disappeared on the fourth day and the boy made a good recovery.

On March 31st I was called to see Arline B., aged 7, temperature 104°, pulse 130; membranes covering tonsils and pharynx. I injected 1000 units of antitoxine within five hours, and gave internally the potas. and iron mixture, and the same time spraying the throat.

April 10th, eleven days later, Allen, aged 5½ years, a member of the same family, developed the disease. When called I found him with a temperature of 104½, pulse 130, and the membranes covering the tonsils and uvula, with a serous discharge from the nose. Within five hours I injected 1000 units of antitoxine and put him on the potas. and iron mixture and the spray. Both of these children made good recoveries; the membranes disappearing on the third or fourth day.

The remaining child, aged 20 months, was immunized with 600 units of antitoxine.

April 19th, a Hungarian, about 19 years of age, came to my office with his throat completely covered with diphtheritic membrane, which emitted a very strong oder. He could scarcely talk owing to his throat being so filled. Said he had been sick for three days. I sent him home and within an hour injected 1500 units of antitoxine, also gave him the potas. and iron mixture, and had him use the spray. I only made one visit; he said he could get along without a doctor. I called to see him one week later, and found him walking around, it being utterly impossible to restrain that class. In all my cases I used Park Davis & Co.'s antitoxine, and firmly believe the lives of my patients were saved by that treatment.

The use of antitoxine not only alleviates the disease, lowers the temperature and pulse rate, but robs it in a great measure of its terrors. Instead of patients being sick from seven to ten days, in the meantime absorbing the poison in the system, so that they often succumb to blood poison, the membrane disappears in about four days.

I do not think it well to rely wholly on the antitoxine treatment. We should use medicine internally to meet indications, a spray as an antiseptic and for the comfort of the patient.

# DIPHTHERIA AND ITS TREATMENT BY ANTITOXINE.

DR. W. B. FOSS, ASHLEY, PA.,

JUNE 3, 1896.

*Mr. President and Members of the Luzerne County Medical Society:*

In writing this paper, it is not my intention to inquire unto the history of the origin of diphtheria or when and where it has made its attacks upon the members of the human family, all along down through the centuries. Whether it is the same disease as described from India, Holland, France, Spain and Italy from the 6th century down to the middle of the 17th century, when it made its appearance in New England, is of but little difference to us. The disease is with us and until very recently was, I may say, the disease which more than any other baffled the skill of physicians, brought terror to the people, and death to the thousands of children who were attacked by it.

Out of the difficulty of diagnosis has arisen most of the difference of opinion in the profession as to which was the best mode of treatment. Some being liberal in their views, classed everything in the sore throat line as diphtheria, and then applying their remedies were able to report a large number of cures, while others being more careful in the selection of cases have applied the same remedies and of course have a much larger percentage of deaths.

To show you, I think, a fair sample of the classification of diphtheria about ten years ago, I have only to quote Prof. Lynch, of Baltimore. He says: "Diphtheria is of four kinds, Catarrhal, Croupous, Gangrenous and Septic." He says: "The first kind will always recover, the second will generally recover, with proper treatment, the third will generally die, regardless of treatment, and the fourth will always die." This you see covers all cases of sore throat, without regard to kind or quantity.

I think I will be allowed the statement that within two or three days most cases may be diagnosed pretty certainly, remembering, of course, that in a few cases uncertainty will be to the front unless we can have the use of the microscope, when all doubt will be at an end. But I am sure that with the treatment of to-day we will give the patient the benefit of the doubt and administer the serum at once.

Not stopping here to notice the symptoms of the disease in any of its forms, I will speak of its treatment by the antitoxine serum.

Dr. J. M. French, of Massachusetts, under date of February 22d, 1896, says: "In the Willard Parker Hospital of New York, the death rate has been reduced from 39 to 28 per cent., and that reports from other hospitals are as low as 5½ per cent," while under the old treatment the average death rate is about 50 per cent. He says further: "The general opinion of the antitoxine treatment for the first year is very favorable, although Lennox Brown, of Great Britain, considers that it creates an increased liability to the most grave complications of diphtheria, viz, anuria nephritis and cardiac failure, and that on this and other grounds he does not feel justified in recommending the use of antitoxine."

Although the majority of writers are in favor of the serum, others just as able and with the same opportunities for observation, among them J. E. Winters, of Willard Parker Hospital, have succeeded in arriving at conclusions exactly in the opposite direction, saying positively that no improvement was noticed more than under other treatment, and that ill results had followed that were not seen in those treated by other methods. My experience covers only six cases. But the percentage of recoveries is greater; recovery has been more rapid and better than under any other treatment that I have used, and at the time when we are so used to seeing the patients sinking slowly from exhaustion or dying suddenly, they have made good their escape and gone on to rapid and complete recovery.

It is the general opinion, I think, that the risks are not great from the use of the serum, and that it should be given in all

cases of the disease without regard to age or condition, as it gives some hope of recovery. It is the general opinion that it should be given early, some defining that to be within three days. I think it would not be safe to fix a limit, as we all have seen cases where death has taken place before the expiration of that time. I think the serum should be given at the first visit, whether that be the first or seventh day of the disease, and that if some improvement is not noticed in from 12 to 24 hours a second dose should be given.

The serum that I have used is prepared by H. K. Mulford Company. The dose has been ten c. c.

I have selected the space between the shoulders for the injection. It offers one advantage over any other site in that it is out of the range of vision of the patient, which is a matter of some importance when the patient is a child. I have been careful to boil my syringe before each time of using, as also to wash the parts where the puncture is to be made in an antiseptic solution. There has been no local irritation at the seat of the injection beyond a little red spot, which has disappeared by the end of the first day. The patients who have been old enough have complained of some pain and soreness in the back. In one case there was a general soreness of the whole muscular system, so that the child would scream on being moved or even touched, but it had all disappeared by the end of the first day.

In my cases there has been no eruption of the skin, neither has there been any ill effects following the use of the serum, as are reported by some writers. I have not been satisfied to give the serum to the exclusion of other remedies. I have used in all cases small doses of calomel until there has been several free movements of the bowels. I have also used a mixture of Tr. of iron and Chlorate of Potash to be taken internally, as well as a spray or a gargle for the throat, for the latter selecting generally the formula of Carl Seiler. Strychnia and whiskey being given when needed, although I have found but little use for these remedies since using the serum. Whether the serum would have done as well without the other remedies I do not know. But if they do no good to the patient they certainly ease the conscience of a doubtful practitioner.

The first case in which I used the serum was in a child of about 9 years of age, with membranous croup. I gave the serum at 11 o'clock A. M. of February 12th, 1896. The patient died three hours later without any signs of improvement. This child had been sick for about two weeks with the grip. Had partially recovered at two different times, and then suddenly on this day was attacked with croup.

Second case, girl aged 9 years, taken sick February 17th, 1896, in the evening. High fever and vomiting. I saw her at 2 P. M. on the 18th. Temperature 103°, pulse 140. Throat full of dark gray membrane. Gave her 10 c. c. of serum at that time. At 8 o'clock A. M. of the following day, temperature 101, pulse 100, membrane loosening; 6 P. M. of the same day temperature 100°, pulse 96. By the end of the fourth day temperature and pulse were normal and the throat clean.

Third case, girl 18 years of age, domestic in a family where one child died from the disease. (I did not have charge of this family, the girl going home as soon as she was taken sick, where I saw her.) My first visit was on February 27th, 1896, 6 o'clock P. M. Her throat was very bad, she having been sick three or four days before sending for me. Gave her 10 c. c. of the serum. By the end of the fourth day her throat was clean and she made a good recovery, although paralysis of the throat followed.

The fourth, fifth and sixth cases were children aged 2, 4 and 6 years, all members of the same family. The well children were sent away from the house each time the disease made its appearance, and each time on their return another has been attacked until the three have been sick. All have made good recoveries under the serum treatment. The first one was taken sick on the 5th day of March and the last one on the 9th day of May.

## DISCUSSION.

DR. A. G. FELL.—I have attended a number of cases of diphtheria in which I have used antitoxine serum and have been most pleased with the result. I used it in one case in which the private parts as well as the throat and nasal cavities were covered with membrane. In about 18 to 24 hours after injecting the serum the edges of the membrane commenced to roll up and the whole gradually came away. I have not observed, since using antitoxine, the sanguinous discharge on separation of the membrane that formerly accompanied my cases. I have used antitoxine in twelve cases, and in the last three have used antitoxine and Loeffler's Solution No. 2, alone.

Of the twelve cases I have lost one, and in this the antitoxine had no chance, as the patient had been suffering from the disease at least eight days before I was called, and was in reality dying from laryngeal diphtheria when I first saw it. One case was suffering from suppression of urine and was on the Iron, Chlorate of Potass. and Bichloride treatment. In 18 hours after using antitoxine there was marked improvement in the urine as well as in all of the general symptoms.

DR. HOWELL.—I reported several cases of diphtheria with the results of antitoxine treatment, at the last meeting of the Society, and I have had no new cases since that time. I have such faith in the antitoxine treatment that I should feel it would be almost criminal in me not to use it. I notice the reports of various Boards of Health giving most excellent results. In one case in St. Louis the mortality was as low as 4 per cent. In my cases I inject the serum into the abdominal walls. I do not know that this is better than between the shoulders, though it may probably be absorbed better.

DR. WHITNEY.—I have used antitoxine in four cases of diphtheritic croup. The cases were all similar as to severity and in all of them intubation was performed.

In two of them the regular routine treatment was also followed. One of these died at the end of the second day of pneumonia; the other developed cerebral symptoms and died on the fourth day. The other two cases received no other treatment than antitoxine.

The first case received two injections, with the result that the membrane and glandular swelling disappeared at the end of the third day.

The other case was very severe, dyspnœa marked, blueness and heart failure beginning to show. The tube was inserted and a full injection of antitoxine given. The membrane soon began to disappear and was entirely gone at the end of the second day. During the fourth day the tube came out itself during a fit of coughing. The recovery was uninterrupted.

DR. W. G. WEAVER.—You doubtless remember that when the subject of diphtheria was under discussion, a little over a year ago, that I expressed an opinion quite adverse to the use of antitoxine, claiming equally good results with other lines of treatment. I also then feared that certain risks were avoided by refusing to use the serum treatment. I am glad to say to-night that I am a thorough convert to antitoxine, and while I would not go so far as Dr. Howell, who thinks that it would be criminal to fail to use antitoxine in the treatment of diphtheria, I would hardly dare to treat a serious case without the serum.

My experience in the use of antitoxine now covers thirteen cases. The first case, as you know, was a most malignant one, an adult treated by me at the hospital. The serum was not used until the fifth day, and after the system was thoroughly poisoned by the ptomain or tox albumen of the disease.

The case was without treatment for several days, and no opportunity to use the serum treatment was earlier afforded. While this case proved fatal on the fourteenth day, of paralysis of the heart, so marked was the improvement after the use of antitoxine, that I was encouraged to continue the treatment.

Since that time I have used the serum in twelve other cases, all of which recovered. Of these twelve cases, three were laryngeal diphtheria, and two of such a severe type that I only used the antitoxine in a spirit of desperation. The improvement was marked after the injection, and in the worst case of the three, in which the dyspnœa was painful to behold, the skin cyanosed, cold and clammy, the pulse running, and the countenance extremely anxious; after ten hours the child fell into a quiet, restful sleep, and was from that time practically well. This child had had a mild attack of pharyngeal diphtheria, and when apparently about over the attack, the croup developed with the results detailed. Two of the cases were naso-pharyngeal in type, with much glandular swelling, and an offensive and irritating nasal discharge.

In only one case was there serious paralysis as a sequel. In this case the serum was used late—about the fifth day. There was internal strabismus, double vision, dilatation of the pupils, and a tottering gait. Articulation was much impaired, and for a time practically abolished. A slow but perfect recovery followed.

The serum used by me was Mulford's. I used in each case 10 c. c. of the strength 1000 units. The cases were all in children from 1½ to 8 years of age. In no case was there anuria following the treatment, and in most cases the quantity of urine was increased and the amount of albumen diminished after the injection of the serum. In only one case was antitoxine the exclusive treatment. In this case recovery was rapid and complete. In the other cases, internally, tr. ferri. chl. with potas. chlorate was used, and, locally, listerine and crude petroleum. I am satisfied that in every case the disease was much shortened by the serum treatment.

No eruptions followed the use of the serum in any of my cases, and in no case did redness or soreness exist after 12 hours at the seat of the injection. I am convinced that where antitoxine is used sufficiently early in the treatment of diphtheria the death rate will be reduced so low as to rob this hitherto very fatal malady of the horror of it which we have entertained.

Dr. H. A. Rothrock, a visitor.—It is interesting to note that one case has been reported of death from an immunizing dose of serum, in a child not affected with diphtheria.

Dr. Geist.—I became a skeptic on antitoxine last summer after seeing the bacteriologists of the New York Board of Health return as genuine cases of diphtheria inocculations made from the throats of healthy physicians—that is, I concluded that many cases of simple sore throat were being treated with antitoxine and reported as diphtheria cures.

In November I came across a case that rapidly grew worse in spite of my treatment, and I felt willing to try antitoxine provided I could feel sure that the serum did no harm. I called on three physicians who had used the serum kept in the stores and found that no bad symptoms had been noticed. I injected 10 c. c. on the third day and noticed an improvement within 12 hours and in 48 hours the membranes had disappeared.

On the 1st of May I saw another case in a family which had lost three children with the disease. On the morning of the second day I found it extending so rapidly that I feared croup and a fatal termination. I injected 10 c. c. of serum. In the evening the child was perhaps a little brighter. The next morning both tonsils were completely covered, membrane very thick but looking soft and as if melting at the base. I gave 10 c. c. more. Child's appetite became very great and in two days was well.

DR. G. W. GUTHRIE.—My experience with antitoxine is limited. Also in my practice diphtheria has, fortunately, lately been less frequent than last year. I am a convert to the use of antitoxine, not so much from my own experience as from the statements of others in whom I have entire confidence.

I have had personal experience in four cases only. In the first case the child probably had the disease for some days. I was called in consultation with Dr. Roe, who had first seen the patient and made the diagnosis the previous evening. The throat was full of membrane, the nose bleeding, and general condition very bad. Ten c. c. injected on Saturday morning. The dose was repeated on Sunday, and on Monday the child died.

The second case was one of marked croup. There was a history of diphtheria in the family next door, and the children of the two families had been playing together. This child had sore throat, but I was not called until symptoms of croup set in. I used Behring's serum, but with no improvement, and the child died the next day.

The third case was one of marked diphtheria, though it did not appear to be malignant. I used the serum in about forty-eight hours after the onset of the disease. In another forty-eight hours the throat was free, and recovery rapidly followed.

At the same time that I used the serum in the above case I injected an immunizing dose in a child of nine months. No diphtheria appeared in this case.

In case three, a marked eruption of erythema, very painful, appeared on the fourteenth day. This was very profuse, but gradually disappeared. It is very hard to prove any point from statistics. A year ago Dr. Weaver and I related our cases without antitoxine. I had fourteen cases recover, and Dr. Weaver was even more successful. It is not the cases in any one hospital alone that can prove the value of a remedy. Dr.

Stewart and myself were recently called to open the larynx of a little patient, which soon after died. Two others in the same family recovered. This proves nothing. My own fatal cases prove nothing against antitoxine, as the remedy was used too late to be of value. When physicians of undoubted ability and honesty tell me they have cases of true laryngeal diphtheria recover in forty-eight hours after using antitoxine, I must believe in its value. I believe in many cases it is a remedy of great value. It has come as a means of relief, and has come to stay.

As to the method of its use. In my cases I injected into the abdominal walls. I think this is an advantage. If in the back it may become painful, as the child lies on the back.

DR. MAHON.—The last word has not yet been spoken. I believe the question is not yet settled. I had in one year twenty-one cases with but one death without antitoxine. To my mind it is not yet clear. I have used it in two cases; one died and the other recovered.

DR. HAKES.—The brief paper just read contains but little matter to be discussed. I get the general idea that the author is favorably impressed with the use of antitoxine in the treatment of diphtheria. But the author broaches no theory as to the curative powers of antitoxine. It seems high time for the advocates of the antitoxine treatment to tell us in most definite terms what antitoxine is and definitely how prepared, and whether all the preparations in use are uniform in mode of preparation and of equal efficacy.

Those of you who seem to unreservedly endorse the proposition of the paper, and to pin your faith to antitoxine as the remedy *par excellence* for diphtheria, ought not to be very much disappointed if you live to see the remedy universally condemned both by the profession and by the laity. Such and similar experiences are not new to the profession. Mortifying they may be, but the experience is old, too common to possess the least merit of novelty. Not so much from the stand taken in the paper read, as from the remarks alleged to be a discussion of the same, do I feel impelled to caution you to make haste slowly in pronouncing such encomiums upon a practice or experiment yet in its infancy. The greatest forward move in five thousand years of surgery, and surgical experiment, stands face to face with this practice of introducing or permitting foreign matter of the nature of antitoxine reaching the general circulation. Of course I do not know much about the nature of antitoxine. I do not profess to; but from the reports of not a few cases where almost immediate death following its introduction into the body, I fancy that this so-called antitoxine is no harmless pet, no mere plaything. What can be the conclusions as to the efficacy of this remedy when given simply to immunize? It is probably a good thing to be immunized, but the grand scheme is to find a remedy to stay or cure the disease. Suppose you assume the role of medical teacher or author. Do you think you would be warranted to-

day in instructing your pupils and readers that in *antitoxine* we possess a remedy or curative for diphtheria more certain than any other, or to be relied upon to the exclusion of all others? Some of you seem to so indicate, and some of you do not. I sometimes think the medical profession is not entirely unjustly accused of rushing to conclusions upon markedly insufficient evidence. As the case stands to-day I am by no means satisfied that the profession should conclude that in so-called antitoxine they have found the desired *ultimatum et desideratum* for the cure of diphtheria. Most certainly when antitoxine is used and intermingled and intermuddled with other long known and well tried remedies, it is a rash presumption to ascribe all favorable results to antitoxine. That would be begging the whole question with a vengeance. In such case the old horse juice is not entitled to the whole credit for good results. Conceding for the present that cures have followed its use, we must also note that there is a danger also embraced in its use. There are also other interests to be served in this matter, of a financial character, to which your patients are not disinterested parties. In the present intense struggle for popularity, fame and filthy lucre, the possibilities of playing a gullible public with old horse juice, at fancy prices, is not to be lost sight of. Very likely many an old horse has been poisoned that needed only good oats and honest hay to be and remain worth something, merely as a horse. The pure blood of a sound horse is good for the horse, but it is not so clear to my mind that a horse poisoned with diphtheria yields blood that possesses the properties and power to cure diphtheria in the human subject. The modus operandi of this antitoxine, whether to cure or to kill, I am compelled to admit, from the expericnces here vouched for, is apparently if not entirely magical. So much so, indeed, that it outranks our mildest remedies for healing virtue, and our most virulent and poisonous drugs as a killing agent. In the latter case it certainly is terribly tragical and magical. It saturates us with the charm, dormant and possible, contained in the witches' stew in the tragedy of Macbeth.

In this connection I observe that there is a rush for the testimony of statistics. So far as they have been invoked in support of antitoxine they, as yet, decide nothing. They are too evenly balanced, like the evidence of witnesses in a trial in the court of quarter sessions. Do we not always find that all disputants manage to quote statistics in support of and in opposition to any sort of theory and every kind of practice? I doubt not, Mr. President, some part of the enormous cash expenditure in advertising and popularizing antitoxine has had some bearing on the obtaining statistics of its efficacy. For some purposes the public vote or town meeting answers very well, but I doubt if the best men in our profession would be willing to be bound in medical theory or practice by any such methods. The fact is that diphtheria, like many other diseases, has all degrees of severity and danger, varying with climate, environment, locality and severity of epidemic. This much was well known long be-

fore the day of antitoxine, and such will be the case when possibly antitoxine shall have been discarded, condemned and forgotten.

While our attention is directed to the argument of statistics it is necessary to keep wide awake to the exact point at issue. Hence we inquire not as to who or how many have been supposed to have been immunized nor as to all the errors and mistakes in diagnosis where antitoxine has been used and credited. We should demand from its advocates to be truthfully informed as to something like the exact number of absolute cases of diphtheria in various localities and at various times absolutely cured with antitoxine alone. Combined with other treatment these statistics are uninstructive and misleading.

At present we know little, if anything, of the nature of this agent or of its mode of action. For the thousandth time we need still to be cautioned against an uncritical reception of testimony on the strength of a great name on oracular authority. The problem is as easy of solution by any man as by any other man. In this regard a famous foreign name must not give the stamp of gospel authority. Make haste slowly, be ye not deceived, hold fast to that which is good, but for heaven's sake let us have no "Brown-Sequard" nonsense in this.

DR. MATLACK.—I have used antitoxine ten times, five for the purpose of immunizing and five for diphtheria. The first case was one of membranous croup. The child was two days ill, was cyanosed and sitting in the mother's lap. She thought the child dying. It was scarcely breathing. I used antitoxine two hours after, and in nine hours the child vomited a piece of membrane. From that time on the recovery was rapid. The other four cases were pharyngeal and naso-pharyngeal, and all got well. There was no rash present in any. I shall use antitoxine in the future.

DR. DAVIES reported one case of a boy who died following the use of antitoxine. It was used in five other cases all of which recovered.

# SOME EXPERIENCES IN ABDOMINAL WORK.

BY DR. W. S. STEWART, WILKES-BARRE, PA.

READ JUNE 17, 1896.

In considering the subject for our paper to-night, I concluded I could not do better than report to you several very interesting cases of extra-uterine pregnancy which I have had lately. It is a subject which is so well understood, or at least should be, not only by the abdominal surgeon, but by the general practitioner, that I shall not attempt to take up the subject in full. With the knowledge we possess at present, it would not do to claim that every case of extra-uterine pregnancy can be diagnosed with any degree of certainty before rupture.

Many prominent gynecologists claim a diagnosis is never made before rupture. Tait has never diagnosed a case prior to rupture, and says: "Under these circumstances I think I may be excused for maintaining a somewhat sceptical attitude concerning the correctness of the diagnosis of those who speak so confidently of making a certain diagnosis in tubal pregnancy before rupture." Joseph Price who is so well known to you all for his large experience in abdominal work, says: "Exceptionally, if ever, is the trouble recognized before rupture." McMurtrie says: "No man can diagnose a case previous to the time of rupture." While the men quoted are men of large experience in this line of work, we must admit their opinions are too radical for the present day. Let us quote, from the other side, men who stand equally well with those whom I have already quoted. Busey says: "The diagnosis should be made in at least eighty-five per cent. of cases, although this may be difficult in some and impossible in others." Hanks says: "Ninety-five per cent. can be diagnosticated before the end of the third month with great certainty." Kelly says; "With a certain order of symptoms and signs, we can, with the utmost certainty, diagnose extra-uterine pregnancy in a certain proportion of cases. In another large proportion of cases it is a mat-

ter of much conjecture." To the ordinary intelligent man it would seem that Kelly's statement is the correct one.

We have had demonstrated by Mundé in a single year eight out of nine cases diagnosed before rupture and demonstrated by abdominal section. One of the strongest arguments against the men who claim that the diagnosis cannot be made until after rupture, is that they are men doing special work and probably never see these cases until they are called in to operate after rupture has taken place. It is very rarely that even the family physician is called until after the mischief is done; and it is he who should be able to make the diagnosis as well as the surgeon. It is the duty of every physician when called to his patient, with the least suspicion of extra uterine pregnancy, to get a full history of the case, and then make a thorough examination of the pelvic organs, and if in doubt, make the examination under anæsthesia, for it is of the greatest importance to the life of the patient to recognize the trouble before rupture has taken place.

The first case I report to you to-night was one I operated on for Dr. Knapp in 1893:

Mrs. C., aet. 27, mother of one child 4 years of age; had always been in good health. On October 3, 1893, Dr. Knapp was called to see her for vomiting of pregnancy, menses having ceased about the middle of August. These symptoms yielded to simple remedies. He was called again on October 12. The patient was then afraid she was going to miscarry, was having bearing down pains; after a careful digital examination he was in doubt as to uterine pregnancy. He advised rest and gave a small dose of morphia which alleviated all symptoms. He was again called during the night of October 24th for severe pain in right side. After giving morphia hypodermically he made a thorough examination and satisfied himself that the uterus was empty, and, at the same time, detected a fluctuating tumor in region of right ovary. He was then convinced of extra-uterine pregnancy. Early in the morning of the 25th, assisted by Dr. Faulds, the patient was etherized and the diagnosis confirmed. On the afternoon of the 25th, Dr. Knapp called on me and stated he had a case of extra-uterine pregnancy, and wanted me to operate. As the case did not seem urgent, at that time, the doctor thought it would be safe to wait until the next day.

I made all my arrangements for operating the next morning. In company with Dr. Guthrie we arrived at the house about 10 A. M. Everything being ready we etherized the patient before making any examination; rupture having already taken place, we were very careful in our examination not to excite any more hemorrhage, the patient was already blanched and pulse very rapid from loss of blood, but had rallied from the shock at time of rupture. Confirming the diagnosis of our friends Drs. Knapp and Faulds, I hastily made an incision through the abdominal walls and found the abdomen and pelvis filled with bright red blood. Evidently the examination had started up fresh hemorrhage; without waiting to clear out the blood, I introduced my hand into the pelvis and drew up the distended tube and clamped it, thereby controlling the hemorrhage. I then cleared out the blood and clots and ligated the tube close to the uterine cornu. The abdomen was then thoroughly washed out and closed, with glass drainage. The patient made a rapid convalesence, the temperature, at no time, reaching 100. On the fourth day after operation she passed a decidual membrane.

Case No. 2. Mrs. D., patient of Dr. Guthrie's, aet. 42, has had three children. The youngest one 12 years. Had three miscarriages, the last one in 1894. Has always had good health. Menses ceased in January, 1896. Had no symptoms of pregnancy as she had had with her other children. She had been flowing for two weeks without pain before the doctor was called. She then had pain on left side, not severe at first, but pain continued to increase in severity, and was only relieved by morphia. Pain was intermittent in character. On February 26th, Dr. Guthrie asked me to see the patient with him, saying that he had a case of extra-uterine pregnancy. I made a careful examination of pelvic organs and found a large boggy mass posteriorly, and to the left of the uterus, freely movable. I fully concurred with the diagnosis and we advised the patient to have the operation done immediately. The night of the 27th the patient was suddenly awakened from her sleep with a feeling of fullness in pelvis. She arose and passed her urine, thinking it would give her relief, which it did, and she returned to bed and fell asleep, and slept all night and had no more pain after that. On March 3d she was removed to the hospital, and on the 5th, assisted by Dr. Guthrie, I operated. To my great surprise, on opening the abdomen, I found the pelvis full of blood and clots, and the left tube ruptured with a large clot in the opening where the rupture had taken place. In this case there had been no symptoms of rupture such as

shock or severe pain which we usually have in these cases. After clearing the pelvis of the blood and clots I ligated the tube, removed it, and washed out with sterelized normal salt solution and closed the abdomen, using glass drainage. I was compelled to leave the tube in longer than usual in this case on account of the large amount of drainage. It was in five days. The patient otherwise made a good recovery.

Case No. 3. Mrs. J., aet. 30, mother of three children, the youngest 18 months old; has always enjoyed good health. Had one miscarriage. Was taken sick on March 11, 1896, complaining of pain in abdomen and a faint feeling; at the same time began to flow, and thought it was her regular menstrual period. On March 16 Dr. Davies was called in to see her, and found her suffering with a diffused pain throughout the abdomen, more severe in both ovarian regions. She gave the Doctor a history of having been menstruating, but the flow was not regular. He prescribed the usual remedies, and called the next day and found patient much better, and she expressed a desire to get up. He advised her to remain in bed, and called the next morning, March 18th, when he found her not so well and suffering a great deal of pain, and during the day she would have fainting spells. He visited her twice that day, the last regular visit being about 4 P. M. At 5.30 P. M. he was hastily called to the house and found the patient suffering from severe shock, with uterine pain in region of left ovary. He gave a hypodermic of morphia, which relieved the pain. I was called in consultation at 7 P. M., found the patient pale, pulse imperceptible, skin cold, and perspiring, temperature subnormal, 96°, restless, unconscious, and in a complete state of collapse. On examination we found the abdomen distended and slightly tender on pressure. The following history I got from her husband: She had been perfectly well up to the 10th or 12th of March. She was returning home from a visit to her mother's, and the street car being crowded, she had to stand, supporting herself by the straps. She felt faint and bad while in the car, and got out and walked some distance to her home; from that on she complained of feeling badly, and began flowing and having pain in the abdomen. On Monday, the 16th of March, Dr. Davies was called. Menses were regular up to February, when they ceased. She then took tansy tea to bring on the flow, but was not successful, and concluded she was pregnant. When the flow came on in March she concluded she was mistaken. After getting this history, I made a very careful pelvic examination, and was unable to demonstrate any mass or tumor without using some

force, which I was afraid to do for fear of increasing the hemorrhage. There was a fullness in both cul-de-sacs and the abdomen was distended. With the history of cessation of menses in February, the complete collapse in which I found the patient was positive proof to me that we had a case of extra peritoneal hemorrhage due to a ruptured ectopic gestation.

The patient's condition at this time was too serious to think of operation. In fact I did not think it possible for her to rally. I advised the doctor to elevate the foot of the bed, apply heat to the extremities and give strychnia and atropia hypodermically, and injections of normal salt solution per rectum. These directions were fully carried out, the doctor remaining with her all night. I called early in the morning and found she had rallied some, could then count the pulse at the wrist, but very weak. I saw her several times during that day in consultation with Dr. Davies and in the evening had Dr. Guthrie see her with us. He fully concurred in our diagnosis, and the question, which was then to consider, was whether to operate at that time or wait. The fact that the patient was showing some symptoms of improving, the hemorrhage having certainly been arrested, we wisely concluded to wait. The patient continued to improve, so much so that I began to doubt whether or not I had better operate. I felt sure the abdomen was filled with blood, and she was then, six days after rupture had taken place, in good condition to stand the operation. On the 24th, assisted by Drs. Guthrie, Weaver and Davies, I operated. On opening up the abdomen, we found it filled with thick, tarry blood and clots, which I thoroughly washed out. I then passed my hand down into the pelvis and found the right tube and ovary normal. On the left side the tube was ruptured close to the cornu of the uterus, which you will see by examining the specimen I show you. It was difficult to find sufficient room to ligate the tube without going into the body of the uterus. I then washed out the abdominal cavity with normal salt solution, and closed up the abdomen, using glass tube for drainage, which I left in for three days. This patient made a good recovery.

In case No. 2 the diagnosis was made positively before rupture had taken place, and we might say the same of No. 1, for Dr. Knapp on his second visit was satisfied the uterus was empty, and had he carried his examination a little further at that time, I do not think there could have been a doubt about the diagnosis. In case No. 3 it would have been impossible to make a positive diagnosis, the rupture taking place very early.

## DISCUSSION.

DR. GUTHRIE.—Where the rupture of the sac is delayed until the second or third month I think it is possible to make a diagnosis with reasonable certainty before rupture. As we become better acquainted with abdominal work, and especially as the general practitioner becomes familiar with these methods of diagnosis the statistics will be changed. These cases are not seen first in the hospital, but in general practice, and it is especially important that the general practitioner should be able to make the diagnosis. It is especially important that the examination be made under anæsthesia, as by this means all of the pelvic organs, with any adventitious growths, can readily be mapped out. Occasionally we meet a person with large abdomen and relaxed walls in whom an examination may be made without an anæsthetic, but as a rule it is impossible. In all cases of extra uterine pregnancy that I have seen the rupture had taken place before operation. I did not know exactly what line of thought the essayist would follow, as the subject of gynæcological work is a broad one, but I want to mention one point that I think worthy of mention. I recently had an accident happen that, to me, was most interesting and instructive. A patient required dilatation and curettment, and as the operation was nearly finished I felt the curette pass through the uterus into the abdominal cavity. I immediately discontinued the operation and packed the uterus and vagina with iodoform gauze. The patient recovered without a bad symptom. The point of importance is that the instruments were thoroughly sterilized. I cite this case to show that this accident may occur in anybody's hands, and that it is not necessarily a dangerous accident if the instruments be sterilized.

DR. FELL.—I have seen two cases of curettment of the uterus in which, to the surprise of the operator, a portion of the omentum appeared at the cervix. In regard to obstruction of the bowels, where it has become complete, I believe it is our duty to open the abdomen and see what is the cause, and, if possible, to remove the obstruction, and in case this is impossible to remove, we do no harm, but have given our patient the best chance for life. In this work the closest aseptic methods are imperative.

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DR. S. M. WOLFE, of Wilkes-Barre, reported the following case of

### URETHRAL CALCULUS:

W. S., age 57, carpenter; family history good. Father died of old age. Mother is 82 years old, and in good health. No hereditary tendency to any disease.

Patient had the ordinary diseases of childhood, but never any

serious illness until eight years ago, at which time, one morning while at work and apparently in his usual health, he suddenly became unconscious and fell to the ground.

His physician was called and pronounced the condition due to a cerebral hemorrhage.

During this attack, he had complete aphasia, which lasted four months. The bladder also was involved, and the patient says he went for thirty-six hours without passing urine, and then voided over three quarts at a single time. He states that there was never any attempt at catheterization. Ten months from the beginning of this attack, he felt so much improved that he was able to resume his work, and, excepting the bladder symptoms, he steadily improved until one year ago, at which time he had a second attack, similar to first, but this time he had a right-sided hemiplegia, and the aphasic symptoms were not pronounced. (Patient is right-handed.) Since the second attack, he has never been able to walk without assistance, and has suffered almost constant pain above pubic joint, in perineum, and in head of penis. Pain becomes much more intense upon effort to void urine. He has constant desire to urinate but it passes only by the drop and with great difficulty. During the past few weeks, all his symptoms have become much intensified.

I first saw him May 12, of the present year. At that time he was lying on the bed writhing in pain. I administered an anodyne, and asked for a specimen of his urine. It came a few hours later, and without standing at all, there was a deposit of fetid pus, which formed over half the entire bulk. Urine was strongly alkaline and no further analysis was thought necessary.

I put him on full doses of benzoic acid, and determined if possible to find cause of the trouble. In attempting to pass a catheter, I found a condition of hypospadias. The meatus being slightly over an inch posterior to the normal location, and so small that a grooved director would not enter. I incised the meatus to the extent of half an inch, and was then able to pass a medium sized catheter back to about the membranous urethra, where it met with an obstruction which proved to be a stone.

May 19, Dr. Guthrie, assisted by myself, removed the stone by external urethrotomy, after making a thorough attempt to remove by way of urethra. Owing to the patient's condition, a general anaesthetic was deemed unsafe. A 4% solution of cocaine was used in urethra, and a spray of ethyl-chloride in line of incision, externally. The stone was so firmly impacted

that after being laid bare, it was with difficulty removed with forceps.

Owing to either a strictured or a distorted condition of urethra, posterior to stone, no instrument could be made to enter the bladder and the wound was closed without drainage. Two hours after operation, patient had a violent chill lasting over an hour. Thirty-six hours after operation there was great extravasation of urine, filling the scrotum and extending into surrounding tissue. This was treated by multiple incision and gauze drainage, also removal of stitches.

Patient has made a slow, but steady recovery. Urine has only a trace of pus. He is entirely free from pain. Has been sitting up since June 6; and strange to say the urinary fistula has almost entirely closed.

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## A SYMPOSIUM ON TYPHOID FEVER.

BY

DRS. MATLACK, BARNEY, DAVIES AND LATHROPE.

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BY DR. G. T. MATLACK, WILKES-BARRE, PA.

READ JULY 1, 1896.

Outbreaks of typhoid fever are still among us, and will continue as long as conditions favorable to its spread are present. If two of the very common sources of infection were looked after more carefully, namely, the neglect in many cases of rendering the discharges of the patient innocuous, and inspection of the water supply, there would certainly be fewer epidemics of this disease. During the past year two new additional means have been suggested by Pfeiffer and Elsner which give promise of aiding much in obtaining both the typhoid and common colon bacillus from fluids containing other bacteria and isolating one from the other readily. If they prove successful they will be of great help to the bacteriologist. Not all exposed to the infection take the disease, but there seems to be a susceptibility among several members of some families and they are taken down with it one after the other. The possibility of

direct transmission must be acknowledged, the poison being evidently given off in the feces.

The invasion of the disease is often so gradual that it is often impossible to obtain from patients exact information as to the time of the beginning of their illness, while in others the disease has an abrupt beginning with a chill, temperature 103 or 104, noticeable at the first visit. The text book type of typhoid fever is an easy thing to recognize, but as it is such an extremely complex disease, and may begin with intensity of action on some certain organ, as the kidneys, nervous system or lungs, it is oftentimes very difficult to diagnose, in fact, many times impossible except by finding the bacilli or at post-mortem. Osler says in his work, where malarial diseases are encountered, it is often mistaken for remittent fever, and that he has been unable to diagnose certain cases without the blood examination.

The resemblance it bears to general miliary tuberculosis without local lesions makes it difficult to distinguish at times. Being distinguished by such a complex symptomatology it is not surprising that clinical errors are liable to be made. I think, with the results of recent observations, that we can exclude the theory that typhoid fever is purely an intestinal disease. The bacilli being found in different parts of the body gives evidence of being a blood infection. The etiology and pathology is well known, being far in advance of treatment in that respect. I think that this disease is one of the most interesting as well as the most deceiving maladies we have to attend. You cannot be certain of the course it will take from day to day, but a fatal termination is by no means the usual result even in cases in which the disease has assumed its worse features. The great majority of the cases of typhoid fever that I have treated for the past year have been characterized chiefly by their mildness, moderate fever from three to four weeks' duration, constipation, and convalescence. I am sorry that they were not all of this character, but they were not, for among them were some grave cases, and some of them died, and these all had diarrhœa as a prominent symptom during the disease. It is a symptom that has been associated with

the most of my fatal cases, and I have learned to look upon it with dread, and am always pleased when I find the bowels regular or constipated, as these are the cases that usually recover.

The most of these cases received symptomatic treatment, combined with the Brand method. Begin with unloading the bowels if the case is seen early, and it seems necessary, but do not give laxatives after the first week. The Brand method was used in my hospital cases, while with the ones outside I used the wet pack and the ice cap for reduction of temperature. I used guiacol occasionally, by external application, for the same purpose, but have abandoned it, as it caused the temperature to drop too suddenly, and some patients being very susceptible to its action, it could not be relied upon in private practice without a trained nurse. The discharges were rendered innocuous with a solution of chloride of lime, which remained one hour before being thrown away. Linen boiled and the use of the bed pan vigorously enforced. Have the room filled with fresh air but not with visitors. Intelligent nursing should be demanded. Milk diet at regular intervals, substituting broths from time to time as the patient gets tired of milk. Give also tea, coffee or cocoa, and a liberal supply of cold water. Stimulants are given when the first sound of the heart is weak, or if the fever is running very high and much delirium, reinforced with strychnine. At present we have the choice of three methods of treating typhoid fever. Symptomatic, hydrotherapeutic, and so-called antiseptic. To estimate the value of any remedial substance in this disease is a very difficult matter. Typhoid fever, like other disorders which run a rather definite course, has a strong natural tendency to terminate in health. We see this tendency when the disease is left entirely to itself, and it equally exists when remedies are employed to regulate its course. This leads us, therefore, too often into the danger of ascribing to drugs what is really due to the workings of nature; of counting recoveries as cures.

The Brand method has forced itself upon the recognition of the profession upon its own merits. That figures mislead is doubtless true, but it happens that there are some statistics

in typhoid fever that cannot mislead. Dr. Vogl's report, for instance, of over 8000 cases of typhoid fever, prolonged through forty years, and it shows a reduction of mortality from an average of 20 per cent., under all kinds of treatment and during epidemics of different intensities, to 2.7 per cent. under Brand baths. This record is from a hospital at Munich governed by strict military discipline. Dr. Vogl occupies a high military position, being chief of the medical staff there. The reports from German, from French, and from American sources are as fully convincing of the utility of this plan of treatment. The bath is given when the temperature remains above 102.5; patient is put in bath at temperature (70 F.) and allowed to remain 15 to 20 minutes, taken out, dried and wrapped in blankets, and temperature taken at once per rectum. It is contraindicated in perforation and hemorrhage. In institutions the Brand method should be fully carried out, as it gives the best results. In private practice it is not an easy plan to carry out, but it can be used in a modified form with good results.

Of the Woodbridge antiseptic and abortive treatment I cannot speak from personal experience. The advocates of this plan have not presented the reports of their cases in a manner worthy of the subject—in giving details which should enable any one to deduce his own lesson. The drugs used are guiacol carbonat, eucalyptol, thymol, podophyllin and calomel. The treatment does not seem to have anything that would commend it as an intestinal antiseptic in the small doses that are given, nor could we expect more from it than by the present symptomatic plan of treatment. They will tell you that they will put their patients on their feet well in fifteen days, allow their patients to eat gross food, and Woodbridge further says that any one who loses a case of typhoid fever is responsible and should be indicted and punished. Such assertions only cause uneasiness among the laity. The pathology of the disease does not warrant the cure which it is said to effect. During the time that the germ is invading the alimentary tract is the period of incubation, the bacilli have passed into the lymphatics of the body and are already being eliminated by the kidneys and involving the liver and spleen. This is the disease

that is said to be aborted by disinfecting the whole twenty-five feet of bowel with a few grains of antiseptics! If you can imagine that is true, all right. Intestinal antiseptics is not a matter alone for typhoid fever. Take cholera, for instance, where the germs grow and thrive in the intestinal canal, the treatment is a failure. I confess that I am a sceptic at present in the Woodbridge treatment of typhoid fever.

In regard to the serum therapy of typhoid fever, I wrote to Dr. W. H. Park, who has charge of the department of bacteriology in the editorial columns of the *Medical News*, and below is his communication in brief:

"Klemperer used the typhoid antitoxine serum in five cases last year. The cases ran an unusually mild and short course. No bad effects were noted. He believes that the cases were benefited by the serum, but states that they were too few in number to prove anything. Later Pfeiffer stated that there was no typhoid antitoxine, but a typhoid bactericidal substance. Roux and others have shown in the May number (96) of *Annual Institute Pasteur* that he was only partially right, for with other methods of immunizing (toxins instead of cultures) undoubted antitoxine was obtained as well as specific bactericidal substance. [Roux writes upon cholera, but the same holds for typhoid.] My own opinion is that we have at present in the serum of animals immunized to typhoid toxins and bacilli a therapeutic agent of some value in typhoid fever, but that it is doubtful whether we will ever obtain it of a power to be as efficacious in typhoid as diphtheria antitoxine is in diphtheria."

# SOME CURRENT CONFLICTING OPINIONS ON TYPHOID FEVER.

BY DR. DELBERT BARNEY, WILKES-BARRE, PA.

READ JULY 1, 1896.

That doctors disagree is so thoroughly proverbial, and at the same time so interesting to the public that advertisers often use the sentiment in bold face type to catch and hold the eye of the reader until the merits of their particular wares may be set forth. It is well that physicians, at least, should disagree at times. Disagreement brings discussion and discussion prompts truth. Without disagreement there could be little material advancement. Disagreement from old methods and customs has made great epochs in medicine—has given us the discovery of the circulation of the blood, vaccination, and antiseptic surgery. On the other hand it has exploded theories which at times seemed logical and tenable, and which seemed to be in a fair way to be generally accepted. Witness the collapse of the gas-bag treatment of consumption, the fall of the testicular juice therapy, and the passing of the bichloride of gold.

In glancing hastily over the literature of typhoid fever we find that the objector often has the floor and is ever trying to keep theory and practice in touch. In the end truth will prevail, and in the meantime we are the better for the discussions thus provoked. Let us note a few of these differences.

In the first place, the name Typhoid Fever seems now to be generally accepted, at least in America, although there are some objections to it. But many years ago Dr. George B. Wood proposed that the term Enteric Fever should be used instead of typhoid fever, or typhus abdominalis of the Germans, on the ground that the symptoms of the disease were caused by a specific poisoning which takes place in the intestines. J. C. Wilson, of Philadelphia, later advocated the same, and one of his most important works is on enteric fever, and I remember that during my student days he used no other designation for the disease in his Blockley clinics. Osler, in summing up the work of the past year on typhoid shows that it is a general

infection with special localizations in the spleen, lymph follicles and bone-marrow. That a case may prove fatal at the height of the disease without a trace of the bacillus of Eberth having appeared in the contents of the bowels; and, indeed, that the bacillus may be absent from the stools throughout the course of cases otherwise typical. On the other hand he says it may be so abundant in the blood and other tissues as to constitute a veritable septicæmia.

Statistics have long since proved that the Brand method of cold bathing, or some modification of it, offers the best known treatment for typhoid. "Hydrotherapy," says Osler, "enables us to dispense with drugs," and another well known writer says that in view of the good results noted by all careful observers who use this method, a surgeon renders himself liable to criminal prosecution if he neglects to give his patients the benefit of it. And yet listen to the editor of the *Medical and Surgical Reporter*: "If the fact that a typhoid patient is too hot is sufficient cause for sousing him in cold water, why shall we not also relieve a starving man by a liberal allowance of food, and revive a man dying of thirst by an unlimited amount of water internally? 'Look at the increased renal elimination,' triumphantly shouts the immersionist, who uses the bath not to reduce temperature but to improve phagacytosis and nutrition. He overlooks the fact that his treatment checks perspiration and drives the blood from the skin to the already congested and poisoned viscera, and leaves only the choice between diuresis, diarrhœa and death." And so on, despite Brand's statistics of only twelve deaths in 1,223 cases, and mortality rate of only one per cent.

During the past few years we have heard much about the antiseptic method of treatment, and no doubt we have all practiced it to some extent at least. But quoting Osler again, we find that if typhoid fever is not an intestinal toxæmia, the antiseptic method of treatment has no reason to exist. Besides we know no way of rendering the bowels "aseptic." While many practitioners find that an initial dose of calomel and an occasional one afterward do great good he says, I never order laxatives. Injections every other day may be used for constipation. Few symptoms are more to be dreaded than

diarrhœa. Cases which are constipated or in which the bowels are regular, rarely die.

We have already heard something to-night about the abortive method of treatment of Woodbridge, and doubtless we will hear more in the discussion to follow. At the meeting of the American Medical Association at Atlanta, in May, a full hour was given to its exposition, after which it was discussed pro and con, and the majority of speakers expressed their belief that the method was illogical, and if freedom of diet be allowed, as its advocates propose, it becomes positively dangerous.

In regard to the susceptibility of children to typhoid, Pepper says: "The disease is more general in early life than is usually recognized. Murchison reports its occurrence in an infant six months old, and Charcellay reports two cases in infants but a few days old, while several observers have found evidences of the disease in the foetus. I have observed several cases during the first year of life." Again, he says, "typhoid fever in infants and children formerly passed under the name of infantile remittent fever, on account of the erroneous belief that typhoid fever did not occur at so early an age. So far from this being the truth, the disease is very common in early life, though it is usually less severe and often of shorter duration." In the January number of *Archives of Pediatrics*, Dr. W. P. Northrup reports four cases occurring last year in the very severe epidemic at Stamford, Conn., in children of thirteen, sixteen and twenty-two months of age, and several others under three years. The *Medical Record* of February 29, 1896, says editorially: "It has long been known that typhoid fever is extremely rare in children under three years of age. The records of four of the largest children's hospitals of this country show that not a single patient under that age had been attacked with typhoid fever for many years. Not a single case had ever occurred in the New York Foundling Asylum in twenty years." There can be no doubt, despite the report of these cases (of Dr. Northrup's) that children under three, and especially under two years of age, are almost immune to typhoid. We say "immune" for the reason that children under two, although they do not take the disease, are still, many of them, fed on milk, which is now recognized as one of

the greatest sources of the disease. The condition which is most commonly mistaken for typhoid fever is catarrhal pneumonia, a disease in which the physical signs are often obscure. Grippe, with slowly developing pneumonia, fevers which result from gastro-intestinal disease and from pleurisy, as well as the fever of tuberculosis have all at times been mistaken for typhoid.

A rather amusing contradiction comes from the Paris correspondent of the *Medical Record.* In the number of March 21, 1896, he describes quite minutely, "Seropathie" as applied to typhoid fever, and then goes on to say: "The days of heroic drugging in typhoid fever have long since been numbered, and experience has shown how much more is to be gained by rest, wines, milk and brandy, at times; at others, quinine and disinfection of the intestinal tract by means of salol. Seropathie will relegate to disuse the much vaunted cold baths which are a real torture for most patients, but to which they have been obliged to resign themselves, because it was the best treatment hitherto known. It is to be hoped that we will soon have fuller data regarding the number of injections used in each individual case, the exact quantity of serum used and its strength. When the ordinary duration of typhoid fever is reduced from twenty-one, twenty-eight or even forty days to seven (the record claimed by the inventor of seropathie) we might truly say that medicine is approaching magic." The same correspondent on June 10, less than three months later, in speaking of a new artificial serum and its use to dilute or wash the blood in certain pathological states, says: "This method is entirely different and not to be confounded with seropathie, which has received several severe blows lately, one case having resulted fatally within an hour after the injection."

Thus, one after another, new plans and new theories arise and submit themselves to the ordeal of practical test. Sometimes they fall with a crash, sometimes they are let down easy, and sometimes they are permitted to stay awhile. In the meantime the rate of mortality in a large number of cases of typhoid fever, without regard to the method of treatment, remains, as it has for years, at fifteen per cent.

# TYPHOID FEVER IN YOUTH AND AGE.

BY DR. W. O. DAVIES, WILKES-BARRE, PA.

READ JULY 1, 1896.

The gentlemen who have preceded me this evening have so thoroughly covered the subject, as I really had anticipated, that I permitted myself to come here almost unprepared to do justice to this important disease.

I shall very briefly report a few cases in my experience with typhoid fever in the young and aged. Authors note that the age most susceptible ranges from 15 to 25 years, and the number of cases become progressively less after thirty, the percentage diminishing rapidly towards childhood. The course in children is observed to be less severe and prolonged.

Case of a child, female, H. P., age 3½ years; began by complaining with severe headache, loss of appetite, cough, very peevish, some elevation of temperature, and constipation. This condition had existed for some days. Was called on the 8th of June; noticed especially the pulmonary trouble; child had a very dry, painful cough; temperature quite high; symptoms indicated the presence of broncho pneumonia, and I treated it accordingly. The next day temperature 101⅔; child was listless; the chest symptoms very much improved, but severe diarrhœa, dry tongue, etc. Third day, the mother reported a very restless night; temperature very high, with delirium all night; diarrhœa continuing; abdominal tenderness; tongue very dry and furred; the stools were characteristic of typhoid fever; the elevated temperature continued with evening exacerbations and morning remissions until the fourteenth day, when it began to subside; convalesence continued uninterruptedly. Yesterday I visited the patient again and found her nearly recovered.

Will also briefly report several cases in advanced age: Mr. J. O. J., age 66; my first visit September 13, 1894; the case was very typical and patient went through the regular course and recovered. Mr. B., age 71; first visit March 2d, this year; all the symptoms characteristic; the elevation of temperature not as high as previous one, but very severe bowel complication and hemorrhage; convalscence very slow, greatly owing to lack of proper care and nourishment; patient died about tenth week from exhaustion.

# SUMMARY OF MODERN TREATMENT OF TYPHOID FEVER

BY DR. W. A. LATHROP, MINER'S MILLS, PA.

READ JULY 1, 1896.

*Mr. President and Gentlemen:*

The gentlemen who have preceded me have so thoroughly covered the ground in general that I thought it a good plan to confine myself to the present status of the treatment of typhoid fever, with a consideration of the best known and valued drugs.

Sihler of Cleveland has employed the Brand method in ninety-five cases, giving over five thousand baths, without a mishap or a dangerous symptom, dependent on the bath. The first effect of the baths was a notable improvement in the circulation and respiration. The secretion of urine was usually increased. Urea diminished one-half. Relapses are more common in cases treated by the baths, but the deaths are also fewer.

Fenwick of London, finding it somewhat difficult to carry out cold bath treatment in practice, and also observing the temperature rise again shortly after the bath, concluded that the recurring pyrexia was due to the warmth of the bed clothes. He devised the ice cradle, consisting of an ordinary iron cradle, long enough not to limit movements of body. Under this the patient lies, covered by some light muslin; attached to cross bars of cradle are small zinc buckets in which ice can be placed. The cradle is covered with a counterpane, except at the two ends, which are left open to allow constant change of air. A hot bottle is placed at the patient's feet, and before the cradle is used, he should be well sponged with tepid water, and thus the temperature is reduced as well as with the bath; ice is not necessary at all times, as the current of air surrounding the patient is often sufficient.

Osler says that "for fever and its concomitants there is no treatment so efficacious as that by cold water, introduced at the end of the last century by Currie, and of late years forced

upon the profession by Brand." Osler uses the cold bath every third hour if the temperature be above 102½. The temperature of water is 70, and he keeps the patient in it for fifteen minutes. Food and a stimulant are given after the bath.

J. C. Wilson of Philadelphia is one of the foremost advocates of the cold bath, and Baruch of New York is also an enthusiast.

Prof. Hare shows some striking figures in his report from the Brisbane Hospital. Of 1838 cases treated under expectant plan, the mortality was 14.8%. Under the incomplete bath treatment 171 cases gave a mortality of 12.3%, while under the strict bath treatment 797 cases showed a mortality of only 7%.

In private practice, where opposition exists against the bath, we may use the cold pack, or sponging, and with excellent results, the benefit being very marked in cases with pronounced nervous symptoms. I recently had two very severe cases, in which the delirium was pronounced, but in each case cold sponge baths brought about (temporarily) complete mental clearness.

Tortchinsky has employed boracic acid in treating 240 cases of typhoid, during an epidemic, with excellent results, only nine terminating fatally. In all cases he employed at the outset from two to four drachms of castor oil with five to ten drops of turpentine. Fever and diarrhœa usually subsided at the end of five days, tympanites disappeared, and tongue and skin became moist.

Charteris of Glasgow, believing that carbolic acid inhibited the activity of the typhoid bacillus, had Keratin coated pills made, each containing two and a half grains, and so prepared as to be insoluble in gastric juice, but soluble in pancreatic. He claims excellent results is a number of cases. Wible reports forty-eight cases, treated with thymol, in which he had only three deaths. He gave five grains every three hours; also gave salicylate of bismuth where diarrhœa was profuse.

Hoelsher, in speaking of guaiacol carbonate, states that in doses of fifteen grains, night and morning, the tongue becomes moist, appetite returns, stools assume a firm consistency, and

the movements are regular. There is no doubt it is a valuable drug. In the use of pure guaiacol externally care must be used, as chills have frequently been produced. Osler calls particular attention to this fact in speaking of the causes of chills in typhoid. Dr. Hoelscher has shown, in investigating carbonate guaiacol, that the site of decomposition, therapeutic action and absorption, is found almost exclusively in the small intestine.

Loranchet reports the employment of mercuric chloride, in doses of $\frac{1}{64}$ grain four times daily, with amelioration of grave symptoms. The tongue remained moist and clean, and tympanites was absent. He reported recovery in all his cases. Thistle of Toronto treated thirteen cases with calomel and soda, and his results were very good.

Drake of Louisville reports very favorably on the use of baptisia, and I think Dr. Guthrie also has found it to give good satisfaction. Drake gives ten drops of the fluid extract every four hours.

Those advocates of the so-called antiseptic treatment of typhoid maintain that we should:

1. Aim as far as possible to remove any portion of poison already formed.

2. Prevent as far as possible the generation of further poison; and

3. Limit the action of the poison already in contact with the tissues.

How far this can be accomplished, I leave it to those present to decide in their discussion to-night.

We have another treatment advocated by Woodbridge, and followed by a good many, and while his ideas may be good, I do not believe it possible to introduce any abortive treatment to a self-limited disease. Dr. Woodbridge is now using about 33% of guaiacol in his various combinations. I have had no experience with his method, and cannot speak for or against it, beyond my belief that it will not abort any genuine case of enteric fever. Dr. Weaver informed me some time ago that he had tried the Woodbridge treatment in several cases, but

did not see any abortive action or any marked benefit from this method over others.

Sulpho-carbonate of zinc has been extensively used, and with favorable results. I have prescribed a great deal of it, and found it to be reliable, not as a curative agent, but as a deodorizer and antiseptic.

Nitro muriatic and phosphoric acid have their advocates and adherents, and no doubt may be useful in a general way. Liebermeister believes iodine to have a demonstrable influence over the disease. Wunderlich believes if calomel be given in a few large doses at the outset, it will cause the fever to run a lighter course. Ergotine has been used chiefly by French physicians, but they will doubtless soon discard it. Sulphite of soda has many adherents, and as a mild antiseptic it is doubtless good, though not nearly so efficacious as guaiacol carbonate.

In the present state of our knowledge of the disease, the treatment must be largely symptomatic, or better, prophylactic. We can fight the conditions present, and try to guard against certain dangerous disorders that may appear at any time. Fresh, pure air is of first importance in the sick room. The importance of keeping the mouth thoroughly cleaned, need hardly be mentioned, though it is sometimes neglected, and may lead to stomatitis, inflammation of parotid gland, and of the middle ear. When the tongue and lips are very dry, touching them with glycerine is an excellent practice. As to diet, I will say little, as all are familiar with the proper foods to give. Bread should not be given, as a rule, though Zwieback does not hesitate to give a roll or a rusk.

Heart weakness is best treated by strychnia; meteorism, by charcoal, bismuth or napthalin; turpentine is doubtful in most cases, though recommended by high authority.

In regard to using antipyretics, we should remember that while they reduce the temperature and relieve headache when present, the benefit ends there, and frequently weakness follows. With the baths, however, as before mentioned, we not only reduce temperature, and keep it under control, but the further benefit is very marked. Water or an acid drink should be frequently given.

Intestinal hemorrhage is an occurrence needing special attention. When this takes place, it means also to cease the cold baths. The chief remedies are ice and opium, with acetate of lead. Ice bags should be laid upon the abdomen, they should be light, and if possible suspended from a hoop. The opium will check peristalsis and promote the formation of a clot. The baths may be resumed after four days, and then very cautiously.

Peritonitis is nearly always fatal.

In regard to convalescence, no solid food should be given till temperature has been normal from eight to ten days.

Murchison claims that tuberculosis is more common after typhoid than after any other fever.

I have not spoken of the use of stimulants, as nearly all cases are laws to themselves; many require alcohol, after the second week, some earlier, and some none at all, but in any case with a weak heart, with the first sound diminished, and low muttering delirium, it is a sheet anchor, and should be freely used. Of course it would surprise you if I closed this paper without mentioning any antitoxine for typhoid. We are getting so nowadays that we look for some one to spring a new serum upon us for almost any ailment.

Chantemesse, in a recent communication to the *British Medical Journal*, announces the fact that he had succeeded in immunizing horses against typhoid bacilli, or the fever virus. He states that the injections of serum produced no injurious effects upon a healthy man. He also reports three cases in which he used the serum. The temperature showed a marked decrease from the time of the first injection, and in seven days after commencing the treatment all three patients were free from fever and had begun to convalesce. Chantemesse says that the cases were not numerous enough to permit any trustworthy conclusions to be drawn, but he has great faith in its ultimate success.

Pfeiffer and Kolle have also made a large number of experiments, and claim that the serum of patients convalescent from typhoid, contain many therapeutic principles, the isolation and concentration of which may greatly broaden the field of serum therapy.

Hughes and Carter, of the Philadelphia hospital, have treated several cases with blood serum obtained from convalescent cases, but curative results were not obtained, though decided impressions were made upon the temperature.

If these and other experiments shall demonstrate its value in typhoid, with the tetanus serum, the diphtheria serum, and the numerous serums already announced, we can soon say with the poet:

It seems so nice to know it,
And feel your mighty power,
To stop disease just when you please,
    At any given hour.
By chaste inoculation of
Most virulent degree,
Containing cytes to kill the mites,
    And set the system free.

'Tis sweet to practice physic in
These happy halcyon days,
With leucocytes and neophytes
    And X cathodal rays. .
When all your signs and symptoms are
Provided fresh at hand,
And then a slug for every bug,
    That travels in the land.

Yes, we owe to germs and Germans
Most all our wit and ken,
Except what comes from out the loom
    Of Paris and Vienn,
And tho' like Pasteur 's rabic schneid
Some go with their petards,
Still, on the whole they have the soul
    Of most of our regards.

## DISCUSSION.

Dr. E. C. Wagner.—I use menthol and creolin—gr. 1—$\overset{\cdot\cdot}{\overline{\text{ᵀ|}}}$ of former and 10 drops of latter in capsule form, one capsule every four to five hours. On second day distinct odor of both menthol and creolin in stools; comparative absence of tympanites. Then again creolin is a distinct styptic and I think thus the danger of melāēna is lessoned.

Monsel's salt, gr. $\overset{\cdot\cdot}{\overline{\text{ᵀ||}}}$ in pill form (with acaciæ) every half hour until three have been taken. Then one every three to four hours *quod necessitatem.*

I have seen several cases of typhoid treated by the calomel method; the post mortem showed necrosis of villi.

Dr. J. I. Roe.—Concerning the occurrence of typhoid fever in children, I can report a case in a child of sixteen months. The father of the child was first stricken with the disease. Several weeks later the child

was taken and developed a typical case of typhoid fever. The mother was taken with the disease about the time the child began to convalesce. Considering the fact that two other cases occurred in this family I have little doubt that the case of the child was one of genuine typhoid.

Regarding the use of the Woodbridge treatment, I would say that I cannot endorse Woodbridge's idea of allowing his patients solid diet and unrestricted exercise. I believe the most important point of the treatment of typhoid is the proper regulation of the diet—a liquid diet—absolute rest in the recumbent posture, and the use of hydrotherapeutic measures to control the temperature. But as regards medicinal treatment, I believe the Woodbridge antiseptic treatment is not only rational, but successful. I have used it in eight or nine cases with the very best results. The longest course of any of these cases was seventeen days, while the shortest was about ten days. While I do not feel that the treatment *aborts* the disease, I do feel quite positive that it shortens the course of the disease, and modifies its severity. From my own experience I am satisfied that it is a valuable treatment.

Dr. L. L. Rogers—Reported having treated eight cases of typhoid during the last year with the Woodbridge treatment, followed by shortening the period varying from ten to eighteen days of duration. The antiseptic catharsis for the first three to six days, or until there has been a marked catharsis of not less than four or five stools repeated for two or three days in succession, then discontinue the cathartics and increase the menthol guaiacol and add thymol and eucalyptol which continued in positive doses every three hours for six to twelve days. In my cases I always use a liquid diet and positive quiet of mind and body.

Dr. Guthrie.—The full and exhaustive resumé of the treatment of typhoid fever just given by Dr. Lathrop is the best evidence that can be given of the irrational practices used. The most contradictory methods have been practiced, and their advocates make claims for their efficiency. When I began the treatment of this disease, over twenty years ago, following the teachings of the elder Flint and Stille, I used small doses of quinine, with diluted muriatic acid also in small doses, with absolute rest and restricted diet, and my patients nearly all got well. Then the so-called antiseptic treatment, by carbolic acid and iodine, was advocated, and I began its use, and under it my patients nearly all got well. Then followed the sulpho-carbolate of zinc, and I tried it, and of the few deaths that I have to regret in private practice from this disease, some of them occurred while using this remedy. Whether the fatal results occurred as a consequence or only a sequence of the use of this remedy, I cannot say, but I used it long enough to convince myself that it had no power whatever to control the diarrhœa which has been so justly pointed out as a dangerous symptom in alarming cases. Dr. Lathrop has referred to the use of the tr. of baptisia by myself. For several years I have been in the habit of using this remedy—not in ten drop doses, however, but in

very small doses—one drop every two hours, combined with a small dose, two or three drops, of dilute phosphoric acid, in a pleasant mixture—say the syrup of red raspberry. This is pleasant to take; it gives the patient and attendants something to do; it may act simply as a placebo, but it does no harm, and may do good. In the beginning I like the effect of calomel, either in a brisk cathartic dose given at once, or a number of small doses at small intervals, followed by a saline.

Two things, to me, are of the first importance in the management of the disease—absolute, perfect rest and a liquid diet. I believe a patient suffering from this disease should be kept as quiet as one having a fractured femur, and that the aliment should consist wholly of milk and animal broths. I believe that under this treatment, or under methods similar to this, typhoid fever, as we meet it in private practice, ought nearly always to get well. There are different types of this disease as of others. You all will recall the epidemic in Plymouth eleven years ago—how the cases resembled the parent case on the mountain, particularly the intestinal symptom of diarrhœa, the hemorrhage, and the fatal attacks of perforation—and yet, even in that *severe* epidemic, the mortality was only ten per cent. And so it occurs to me that the cases of this trouble we have been meeting in private practice for several years have been characterized by a mildness of character and a tendency to get well, unless the recovery be hampered or prevented by injudicious treatment. Indeed, to be plain, I think that frequently the greatest obstacles in the way of a patient recovering is the doctor.

I have had no experience with the Woodbridge method, but let me say a word as to the so-called Brand method. I have never tubbed a patient in private practice, but I have observed it in the practice of my colleagues in the hospital. I object to it.

1. Because it disturbs the patient and prevents that absolute quiet that I have insisted upon.

2. It is cruel. My medical friends who advocate its use deny this, and say that it is very welcome to the patient; but I have never gone into the medical wards, when the process of tubbing was going on, that I did not hear the patient moaning piteously and giving evidence of discomfort and suffering. And

3. The mortality does not impress me as conclusive of the efficacy of the treatment.

My medical colleagues have fatal cases in their hospital practice, but they always offer some very ingenious excuses to explain the fatal issue—either they did not get the patient soon enough, or he was not tubbed often enough, or the like.

But you may ask, would you never apply cold as an antipyretic. To this I ask your indulgence while I report from memory a case of this disease recently treated.

The patient was a boy of 10 years, a typical case of typhoid fever presenting all the symptoms required—fever with the characteristic course, diarrhœa, nose bleed, cough, spots. The course was about four weeks under the treatment I have previously outlined. He was four days with-

out fever, morning and evening; apparently perfectly convalescent. His nurse was still very careful as to his aliment, but a playmate was allowed to visit him, and after exciting play and some romping over the bed, he had a recurrence of fever of a more severe type, temperature 104 to 105; the symptoms of the previous attack recurred—rose colored spots, diarrhœa and all. In the second week of his relapse, his temperature was 104 and over, in the afternoon; he was delirious and restless and the fight was turning against him.

I directed the nurse to wrap him in a sheet, rung out of cold water, in the evening, and allow him to remain fifteen minutes. That night he went to sleep and the next morning he was better. This was done for three nights in succession, and after that the temperature took the downward side of the curve and he convalesced finely at the end of another four weeks.

I believe that cold sponging is beneficial, and have used it from the beginning of my practice, and in a juncture like that just cited I would use the cold pack, but I do not find it necessary very often to resort to it. In conclusion, then, I would summarize: that an ordinary typical case of typhoid fever in private practice ought nearly always to get well, if properly managed; that the management should consist of the most perfect care and nursing, for there is no disease in which good nursing goes for so much. The patient should be surrounded by absolute quiet and rest, not removed from the bed, nor even be lifted from the prone position. His diet should be absolutely liquid, and consist of milk and animal broths or teas; his medical treatment should be in the highest degree expectant, some prescription such as I have given above, to be administered regularly; strychnine, if required for the heart; opium or morphine for diarrhœa; ice bags to the right iliac region, morphine hypodermically should hemorrhage occur, and the cold pack should the continued high temperature become a menace to the patient's safety.

Dr. Howell.—In the epidemic of 1889 we had some 600 cases of typhoid fever, and out of that number I treated nearly 125 cases. Among these were two children, aged thirteen months and eighteen months. In all my cases I used the mineral acids, or if much headache I used the hydrobromic acid. Among the number of cases there were three deaths, one from perforation, one from exhaustion, and one died after he had passed into other hands.

Dr. Jones.—I fully concur in the remarks made by Dr. Guthrie, and with those of Dr. Lathrop. I think the treatment of typhoid fever is oftentimes very much overdone. Sleeplessness and nervous manifestations are frequent annoyances in this fever and are best overcome by sodium bromide given in frequent doses. Where there is evidence of much prostration it is better to give alcohol early than late, and not wait until there is distinct evidence of heart failure. A temperature of 102 or even 103 need not give much concern; when higher, cold sponging or an occasional bath is serviceable. Let the treatment be distinctly a common sense one.

# DIETETICS.

BY DR. W. CLIVE SMITH, WILKES-BARRE, PA.

READ AT MID-SUMMER MEETING, HARVEY'S LAKE, PA.,
AUGUST 12, 1896.

It is necessary to have food to supply the body with the substance requisite for its growth, and reproduction of tissue, and for the development of that energy for doing work.

In obtaining this we must have a perfect food, one that comprises all the elements needed for the maintenance of bodily structure, and the support of its functions, and have these (elements) supplied in such a manner that the organs of the body can digest and assimilate them.

The many organic and inorganic compounds, which enter into the composition of the body, may be resolved into a few elements, and these must in some form or other be represented in the food of man, and be represented in such state of combination that they may be of service to us as food. Extensive investigations have been made into all classes of foods, in order to estimate their nutrient, their heat producing, and their force producing value, and many tables have been published furnishing information of this character, but all this work is merely approximate, and liability to err is considerable, for the mere calculation of nitrogen, carbon, and other elements in the food does not at all show its force value, unless at the same time it can be shown that it is assimilated. It follows the same principle as the unsuitable and almost worthless arrangement and classification of substances into "food and drink;" the one giving solid, the other liquid matter, for the liquids often contain the most nourishing substances in solid matter, and in all food we take there is a large amount of fluids. Many substances appear to contain abundant food energy, which in reality are not economical foods at all, from the point of view of supplying all the needs of the body; *for instance*, the fat of meats, especially beef, is wholesome, but it contains no element (nitrogen) for the formation of tissues, and many of the products

of the vegetable kingdom contain a large proportion of flesh-formers, as compared with heat givers; *but* it is not the purpose of this paper to go into an elaborate discussion of the contained percentage of the different elements in the food, and of the value and general qualities of the different articles of diet in health, upon the division, sub-division and classifications made by the different authors, and the quantity and quality, cost and history, and their relative value in private and public institutions; for these details and data are often misleading and uncertain, and in following them out the investigation is so elaborate that the consideration for the sick in private practice is often overlooked.

Under ordinary circumstances instinct guides us in our selection of food and drink, aided by the sensation of hunger and thirst to regulate the amount that we ought to consume, but in a disordered condition, the body and mind are in such a preverted state that nature fails to prompt, and reason must be brought into use. Skill and attention are called into requisition, and it is then that the advice and knowledge of the physician are to be sought, for in a large majority of cases the treatment of the disease is dependent upon the judicious management of the food.

It devolves upon the physician in the dietetic management of his case to point out the suitable kinds, and quantities of food to be taken, for it frequently happens that the difficulty in the sick room is to get the patient to take the proper amount of food, the inclination to eat depending upon the state of the mind and body. The food must be made pleasing to the eye, agreeable to the palate and digestible to the stomach, and, when the disease allows it, of a suitable variety to keep up an appetite.

It is often impossible to lay down certain rules, founded upon rigid dietetic regulations, containing so many grains of this or that element required for the sustaining of life, for the *obstacle* which too often confronts the practitioner is what *can*, and not what *should* be taken by the patient.

Men write books and publish them for several reasons, among these the extension of the general stock of information

and the correction of the errors into which previous authors have fallen. One author will tell you that liquid food can not be tolerated by a weak stomach, another that solid food is highly injurious; *from which* the reader very readily concludes that the question is altogether unimportant and eats just what he happens to fancy.

The sick, as a rule, are seldom capable of healthy reflection; they are most always seeking for causes of fear and anxiety, hence are very apt to suspect the "seeds of disease in every dish, and poison in every cup, when doctors disagree." Even in ancient times, dietetics was admitted to be of the greatest importance in the treatment of the various diseased conditions. Hippocrates thought so much of it that the *point* of his treatise, "On the management of acute diseases," lies in the recommendation of the use of wine, and a concoction of barley, now called gruel. The proper preparation of the latter he considered so important that he condescends to tell just how to make it, so that it may be *thin*, but not *too thin*, *thick*, but not *too thick*, as Miss Austen describes the perfection of this dietetic article.

It should be remembered that the desire for food is dependent upon its proper application, and defective nutrition will often cause a failure of appetite. It is not what to eat and what to drink, and what not to eat and drink, but what we digest, assimilate and apply, for food in the stomach, but not digested, is apt to prove a source of irritation and do harm; and, because food has been taken, it must not be thought that it will be of service.

The influence of a wisely selected diet, intended by nature to replace tissue waste, and restore and maintain bodily strength in the diseased, is little understood by the laity, and even physicians give the subject but little consideration. A judicious diet list, based upon a thorough knowledge of the case and needs of the patient, should accompany each prescription as an important part of the treatment. Do not tell a patient his diet should consist of proteids chiefly, or be mainly carbohydrates, or that fats is what he needs, but *specify*.

In selecting our food for our patients, while each disease

calls for this or that special line of diet, and the demands of different individuals for nutrients vary with age, occupation and other conditions of life, especially the characteristics of people; while as a rule no two people are exactly alike in the expenditure of energy, and needs to repair waste, *yet* we have a few articles that have by nature been endowed with superior qualities. We obtain our food from both the animal and vegetable kingdom. Animal foods have the advantage in that they contain the same chemical elements as the bodies they are destined to feed, they are rich in nitrogenous substances, are easily digested and assimilated, and when cooked impart agreeable flavors, and are well adapted to the growth of the body.

One of the most important of animal foods is milk, for not only does it form the exclusive diet for the young, but may be used by the adult in disease. It is a complete food, that is, it contains all the elements necessary for the sustaining of the body. It is a diuretic; it is a fluid; cheap, and always procurable. When patients are fond of milk, and digest it, there is no better food, but unfortunately it has the one drawback of forming at times a solid in the body and may pass thus through the whole intestine, causing irritation, as in typhoid fever. To some patients it acts in an unpleasant manner. They *can not* digest it, and will tell you that in health they can not endure the taste; it always makes them bilious, constipated, and excites headache, or possibly while taking it at the beginning of an illness, the patient becomes tired of it after taking it exclusively for several weeks at a time.

Within a few years a number of writers have advised a departure from a strict milk diet in fevers, and have found it advantageous to increase the food, or vary it; and while it is easier to put the patient on a strictly milk regime (which is the ideal one), yet it is far more important to devote a little study in securing a variation of the food, and by a small change the objection to the taste can always be overcome, and by a little tact and perseverance there are few people who cannot assimilate a milk diet for some weeks.

A small change in the diet is refreshing as change of air,

and the gratifying results are sometimes credited to the skill of the medical adviser in making an approved selection, when they are really due to the change itself. For an exclusive milk diet the limit lies between one and three quarts per diem, depending somewhat upon the size and age of the individual, but more upon the condition of his digestion. A clean tongue, soft abdomen, and natural milk stools indicate that the milk is being digested. It is necessary to be on the watch for any signs of indigestion, and it should then be given with certain precautions. It should be boiled; it should be given diluted either with water, lime water, or better still, some alkaline water, as Vichy or Appolonaris. As a fever patient needs water, we need have no hesitation in diluting his milk. When patients become tired of the raw milk, it can be flavored in a variety of ways. A teaspoonful or two of black coffee, or a little extract of coffee, may be used, while caramel, chocolate, cocoa, or even ginger will relieve the monotony of the taste for a limited time.

When alcohol is not contra indicated, patients are willing to drink milk in the form of eggnogs, or weak punches, while in other cases it acts better upon the stomach to alternate, by giving milk, whisky and broths at different intervals. Various malt extracts are sometimes added to the milk, and enjoyed by the patient. Thompson gives the following excellent way to prepare it: "Add a ʒ of malt extract to a pint of milk, warming it for the first half hour, and then allowing it to boil to the full hour." In instances where milk, even so diluted or prepared, tends to disagree, it is well to try the patient on whey, koumis or matzoon.

Koumis, an Eastern product made from mare's milk, but manufactured from the milk of cows in the United States, is of great service as an easily digested food for many cases of obstinate gastric irritation and severe vomiting, and may be retained when anything else would be rejected; and there are often cases in which it agrees better with children, even babies, than pancreanized or peptonized milk.

We have another complete food in eggs, which, next to milk, is the most valuable form of food for those who are ill,

and they certainly form one of the important articles for a diet list, as they can be prescribed either alone, or in combination with other food; raw, when a highly concentrated nutritious diet is desired in any form of wasting disease—or cooked in the various ways for convalescents in other aliments. A lightly beaten egg, flavored with sherry, brandy, coffee or chocolate, or simply beaten up and strained with warm water, and then added to a light soup, will often be taken by patients when nothing else can be retained; and when given so, it has the advantage of being digested in the stomach quicker than a cooked one (egg). One of the greatest faults in preparing eggs for an invalid is that they are as a rule cooked too much. In making the omelettes and scrambled eggs, the white being thoroughly mixed with the yolk, makes them more digestible than when cooked or fried so much that the albumen is hard.

An excellent way suggested by Henry, in cooking eggs in the sick room, is to immerse a cup in boiling water till it becomes thoroughly heated. It is then removed, and the egg broken and dropped into it. The cup may then be wrapped in a cloth for a few seconds, when the heat will be sufficient to cook it. Eggs and oysters are alike in the degree that they ought to be cooked, for there is nothing more digestible than a raw or lightly cooked oyster, which is digested quicker than meats.

Dr. William Roberts, in his work "On the Digestive Ferments," advances an interesting theory in relation to oysters as food. He claims that the effect of cooking is to diminish their digestibility, which would make oysters the exception in this respect among the articles that furnish albuminoid matter. He explains his reason by saying that the fawn colored part of the oyster, containing about half its substance, is its liver, composed partly of glycogen. Associated with this, but withheld from actual contact during life, is its appropriate digestive ferment, diastase. Mastication mixes these constituents, and they are digested without other aid. Cooking destroys the digesting properties of the diastase, and then the oyster has to be digested like other food, by the eater's own digestive power.

Other authorities question and doubt Dr. Roberts' theory. At any rate both oysters (it is best to allow only the soft parts to be eaten in the beginning of convalescence) and clams have the advantage, in that they are very generally liked, and they make a pleasant variety of food to relieve restricted diet, as well as imparting agreeable flavors to milk and broths.

Clam juice is almost a specific in vomiting, being retained when beef juice and milk will not. It is certainly stimulating to the gastric mucous membrane, having an invigorating effect upon the stomach, and increasing the appetite.

As an article of nourishment fish does not possess the satisfying and stimulating properties that belongs to the flesh of quadrupeds and birds, and there seems to be no class of diseases in which a fish diet possesses a special value; but often in chronic Bright's, gout, and other conditions, where there is necessity for a meat diet, it is very serviceable as a compromise for a time; *but*, fish should be eaten in season, and as fresh as possible, for there are few substances capable of exciting so violent a gastro enteritis as decomposing fish.

Pavy says: "Of all fish whiting is the most tender, delicate, and easy of digestion, and less liable to disagree with a weak stomach. The blue fish is a tender and digestible fish, and for its delicate flavor enjoys a high reputation as a food for the invalid. The flounder is light and easy of digestion, but insipid. In all cases where fish is desired for an invalid with a weak stomach, either boiling or broiling should constitute the process of cooking. Frying is objectional on account of the fatty matter used, rendering the fish rich, and less digestible.

Various foods in febrile diseases are the many meat infusions, as beef tea, mutton, veal and chicken broths, clear soups, both strong and weak, the usefulness and value of which, although objected to by some, have been almost universally admitted. Beef, on account of its nutritive value, excellent flavor, and comparative ease of digestion, and containing the many substances necessary to nourish the body, viz., water, fat, albumen, gelatin and salts, is so important a food for the healthy as well as the sick, that many attempts have been made to

improve its digestibility for the latter; *but*, unfortunately, most of the expressed juices and extracts, while useful additions to milk, are so far inferior in nutritive value, that they are really little more than peptogens, *i. e.*, stimulants to the gastric secretions, while the too *concentrated* forms often prove repugnant to the sick. As a febrile patient needs water, it seems a mistake to give these meat extracts in a too compressed form, for there is no reason why good water should not be mixed with the other constiuents of food. Too little attention is given to the flavoring of the soups. It is quite as practicable to make, besides meat soups, those that contain a considerable quantity of the expressed juice of fresh vegetables, such as carrots, turnips, celery, parsley, together with the aromatic herbs.

The office of beef tea is by no means unimportant, and when well borne it should be given in moderate doses, but when given to the extent of one or two pints a day, it is almost certain to excite diarrhœa on account of the large proportions of potassium salts which it contains. The *nutritive* value of the preparation has formed a subject for much discussion, as it has often been asserted that it is comparatively useless, and that a pint scarcely contains an ounce of anything, but if rightly made it is certainly of some value, although of less importance than milk or eggs. It differs considerably from mutton broth, a wholesome and nutritious article of invalid diet. Baur declares "it more digestible than beef;" while Pavy says, referring to both veal and lamb: "They are meats generally desirable to be avoided."

Various kinds of birds, such as squabs, partridge, snipe and pheasant are particularly appropriate for the sick, partly because we associate them with the dainty things of life, but more on account of the valuable nutrient properties which they contain. The meat of chicken stands in high favor, whether cooked by broiling, roasting or boiling. The white meat is more digestable than the dark, and a portion of the breast may be given to a typhoid convalescent, or a patient recovering from a severe illness, before either beef or mutton is allowed. Chicken soup is almost universally liked, and when thickened with rice and eggs, it forms a highly desired invalid

food. Faranaceous foods containing carbo-hydrates, viz., starches and sugars, can be suitably administered in various fluid forms; thin oatmeal, or barley gruel, carefully strained, and flavored with any agreeable spices, or aromatics, as lemon peel, cloves or nutmegs, is one of the best articles for a light diet, and can be freshly made when desired. The employment of barley, especially bread, for food, is of very ancient date, reaching back to the times of the Greeks. Barley water makes an excellent demulcent drink for children and invalids, and it is better than oat meal water when the bowels are loose, but by being mixed with milk, meat essence or beef tea, it forms a useful and composite food. The nutritive value of oatmeal is very great, but it depends largely upon the skill with which it is prepared, as it should be so thoroughly cooked as to acquire the consistence which enables it to be easily poured, and, on cooling, it should form a tender gelatinous mass. A small quantity of arrow root, ground rice, or well baked flour can be added to a clear soup, or to beef tea, taking care that they are not made too thick. Such food is easy of digestion, and acts, when given in small quantities at a time, as fuel stuff to the tissues. Vegetables, as a rule, are not included in a diet list till convalesence is well established, although celery, tomatoes and asparagus, having been thoroughly cooked with milk, sometimes serve as pleasing and satisfactory food, when a change for a limited time is desired. We obtain our material for beverages in some of the febrile disease often from fruits, and from the juice of the orange, lemon and grapes, can many pleasing and agreeable concoctions be made suitable for various diseases. Lemon juice is a well known remedy for sea sickness, and when a slice is held in the mouth it often removes the disagreeable taste arising from a coated tongue, while its efficiency may be improved by using it with some aerated water, and bicarbonate of soda, although the preparation, as a drink, does not equal the useful article of drink for an invalid as the one made from the juice of an orange, for there is no fruit which is so generally available in the sick room; it is agreeable to almost every one, and is soothing and refreshing in mild fevers as well as in gastric irritation and

tendency to vomiting. Apples have somewhat of a laxative effect, especially when taken upon an empty stomach. There are many dyspeptics who thrive upon them, but to invalids they should be given only when well cooked, being most digestible when baked, and eaten with cream, or beaten with white of eggs, or stewed as apple sauce, although the latter preparation should not be used in cases of gastro-enterititis or diabetes on account of the great amount of sugar that has to be added. Among the most delicate articles of diet for the sick table, on account of their delicious flavor, as well as their general wholesomeness, are grapes. Although they possess but little nutritive value on account of the large amount of water of which they are constituted, they have long been recognized as an excellent article of light food for invalids, except in cases of diabetes and gout, on account of the sugar they contain. Tea is a valuable article of diet, although not a direct nutrient. It is classed with the so called "acessary foods," and although not in itself nutritious, aids by its good flavor and stimulating properties, the digestion of other things. It is a nerve tonic, and is quite valuable as a curative agent for headache and some forms of indigestion. The slight stimulus resulting from its use, when taken in moderation, is unattended by any after ill effects. It, like coffee, diminishes the sensation of hunger, invigorates and refreshes. It is hard to determine whether the latter article can be classed as a food. It is generally agreed that coffee is invigorating, that it aids digestion, that it is capable of retarding waste, and thereby acting directly as a food. While chocolate is somewhat overrated as a food, it is very nutritious, and, like cocoa, if properly prepared, can be easily digested and absorbed. It has an advantage over tea and coffee, in that it does not produce wakefulness, nor is it injurious to the nervous system after an over indulgence, although it is very apt to cause gastric dyspepsia, on account of the large quantity of sugar it contains.

The position held by alcohol, in an alimentary aspect, has long been a point of discussion as to whether it possessed any real value. Liebig, Perrin and Dupree have had long and varied discussions, with the result certainly in the affirma-

tive. A small portion may escape from the body unconsumed, but the main part of the alcohol that is ingested is lost sight of and presumably from being turned into account in the system. At any rate when taken in moderate doses the action of the circulation is increased, the heart beats more rapidly, the pulse becomes fuller and more frequent, and the arteries dilating, allow the blood to flow into the capillaries. The question as to whether we, as a nation, are better or worse for the existence of alcohol is difficult of solution; and Thompson in his "Dietetics" goes into a long discussion on the subject: "To balance the death caused by alcoholism and the other diseases not necessarily fatal, except for the existing circumstances of drink, against the many cases of infants and adults in which life has undoubtedly been saved by the promptness of this food and stimulant, I think we will come to look upon alcohol rather as a blessing than a curse, for there is no form of stimulant and food combined, or stimulant alone, which taken all in all, can be so relied upon." It must not be inferred from the foregoing statements that alcohol should be given in every sickness. There are many cases in which it is contra-indicated; in others it is best to wait until there are indications. Again it should be prescribed at once, as in any of the acute diseases in the old and feeble, for, as in acute fevers, it is sometimes as impossible to arrest the symptoms as it is to arrest the rising waves, but we must take care that they do not swamp our boat, and the safest way to do that is to keep our vessels as sound as possible and capable of resisting external influences. This we can do with alcohol in any of its various forms, for each one is suited best to this or that disease, but it is best to adhere to one certain form of beverage, for, as a rule, the stomach is always temporarily enfeebled, and a combination will invariably cause unpleasant after effects. Light wines, claret, and even beer, are recommended in fevers by some writers on dietetics, especially in countries where good water is not available, but as a rule either whiskey or brandy should be prescribed, or champagne where the condition and position of the patient will allow it. Malt liquors are apt to increase irritating coughs, while strong wines might

prove beneficial, as they do in cases of enfeebled heart-action and weak digestion. When beer and porter do not disarrange the stomach they may be used by invalids in feeble health, due to long continued illness, or in any of the wasting diseases, as phthisis.

There is still a difference of opinion in regard to food in the different diseases, but the general principles of dietetics are becoming better understood. We do not hear of those disastrous consequences of improper dieting effecting large numbers of people that were formerly from time to time recorded. We read in history that after a grand medieval feast, the bones and refuse of the repast were thrown under the table and left to decay.

The scourges which have swept over Europe in past centuries we know, to-day, were not visitations of Providence, but were simply the result of natural causes, due to ignorance of all hygienic laws on the part of the people. Compared with the barbarians of old in these matters, we are a civilized people. Compared with the possibilities of the future, we are little more than savages.

For many physicians it is easier to write a prescription for some tonic than to explain to the patient a definite diet list, which might prove invaluable to him. Possibly the physician considers it beneath him, if so he should at least impress upon the friends, or nurse (if he is lucky enough to have one) the importance of such care, for an attendant has a better opportunity than a physician to study a patient's whims and fancy in regard to food. Directions are apt to be given in too indefinite a manner to a nurse, and from lack of instruction she may neutralize the effect of medicine by over-feeding, which disorders the digestion. She is often told to give liquid, or soft diet, and she at once starts in giving some articles that do not all agree, or possibly, when directed to give only one class of food, she insists upon its being carried out even against the nausea and disgust of the patient. Endeavor to remember individual tastes, and try to gratify them, for often these preferences are true instincts of the individual nature, trying to secure that which is best for it. Order food to be given at

regular intervals. If a patient is very ill the rule is to administer nourishment in small quantities and often. The quantity will always depend upon the condition of the patient, and will vary for each person. Rather give too little than too much, with the understanding that there is more to be had. A little is often a challenge for more, while a large quantity will disgust. Order hot food to be given as warm as possible, remembering that the warmth of all these foods is one of their valuable qualities, while cold articles, especially cool drinks, should be given as cool as possible. Patients need to be aroused from sleep to take nourishment only in severe cases, while the ease with which an individual can again fall asleep, after being awakened, will be the guide in other cases.

If cooking is a science, then serving food is an art, for it involves so much of good taste in so many directions, and depends largely upon the individual and circumstances. A badly prepared or unwholesome dish, no matter how beautifully it may be presented, is worthless—even worse, for it may prove a positive source of irritation. Patients may appear too ill to notice details, while in fact they are too ill to speak of them; and, if possible, all accessories as to the serving of food should be carried out to a nicety. The horizon of the sick room is limited, and the taking of food is the chief event of the day to the patient, while the natural stimulants to appetite, such as fresh air, exercise, and so on, are necessarily wanting to a body depleted and exhausted by long-continued illness, so that all the substances needed for repair and restoration of tissues and bodily vigor must be drawn from the food.

Boland credits a Harvard professor with saying that no man could be a gentleman without a knowledge of chemistry, and forthwith all the students took to chemistry, for all wanted to be gentlemen. What if some one would authoritatively declare that no physician would be proficient in medicine till he knew the diet for the sick room. Would they all study *Dietetics?*

The modern idea that good nursing is the great contributing factor to the successful treatment of disease is correct. The physician who is up to date in all the accessories to usual medical knowledge, who can not only tell his patients how

they should live, but, if necessary, tell them in a practical manner how food should be prepared, will meet with the highest success. The old idea that the physician, before he has earned his fee and done his duty, must give some proof of his ability by prescribing or leaving some medicine, is gradually becoming obsolete. A new era will be entered upon in the practice of medicine when the medical world recognizes that under no circumstances can drugs take the place of food; and, while not considering the value of medicines too lightly, yet what we ought to decry is the prevalent notion that drugs are the beginning, middle and end in treating disease. The wise physician will be he who gives more advice, less drugs, and cultivates a taste for proper food.

The *ideal* life is one in which there shall be no sickness except from accident and natural causes. When we have mastered the laws of hygiene then will such a life be possible. Meanwhile, with sickness always in our midst, we should keep the *ideal* ever before us, and endeavor, by all means, to restore diseased human beings to a perfect state of health. A sound body is a material thing, nourished by material substances, which produce just as exact results in its chemical combination, as if these substances entered into union in the laboratory of the chemist. The cooking of food should be governed by exact laws, which, for the most part, remain, as yet, undemonstrated.

In conclusion, cooking is an accomplishment. It is noble because it is useful. Good cooking causes more happiness, and poor cooking more unhappiness than any other subject. A woman does not finish her education till she knows how to cook. So it is with a physician in the art of prescribing food for his patients. We might even go farther and say that the civilization and progress of a nation depend, primarily, on two factors: One, the purity of its religion; the other, the proper preparation of its food. Indeed, we can say with Thompson: "Verily, the hand that prepares the nation's food, is the hand that moves the world."

# UNUSUAL CASES IN PRACTICE.

BY DR. J. I. ROE, WILKES-BARRE, PA.

READ SEPTEMBER 2, 1896.

In the practice of medicine we all find a great many variations in the forms of disease—no two cases of the same disease are exactly alike—still, when one casts about for "*unusual* cases in practice," as has been announced for the subject to-night, one finds that after all there seems to be no very great departure from the ordinary course of events as presented in every day practice, and one is almost forced to say with the wise man of old, "There is no new thing under the sun." The two cases which I am about to relate are, however, somewhat unusual; in fact, more unusual than interesting or instructive.

Several years ago I was called, one morning about eight o'clock, to visit a woman whom I had been engaged to attend in labor. This was her second confinement. Her first labor, upon which occasion I had also officiated, was complicated by eclampsia, and she was delivered by forceps in order to speedily terminate what would otherwise have been a normal labor. The husband, who summoned me for this second confinement, said he thought there was no hurry, but requested that I call before starting out to make my morning rounds, and, as he lived but a few doors distant, I promptly responded to his call. The patient was considerably below the medium stature, but otherwise well developed. There had been no pain, but she had felt a slight bearing down. Upon examination, the cervix was found to be soft, and the os but slightly dilated; the membranes were not ruptured, and to all appearances it seemed that labor had not yet set in. I promised to call again in a few hours, and directed that I should be summoned in case the pains came sooner. Returning to my office, I was preparing to begin my day's work, and had been not more than ten minutes absent, when I was hurriedly summoned to return to my patient. Hastily responding, I was quite taken aback upon my arrival to find that delivery had been completed, and an eight pound boy was crying lustily for attention. I was informed that a few minutes after I left she felt an inclination to bear down, and that the bearing down had resulted in the expulsion of the child, the whole event not occupying more

than a minute's time. The peculiar and unusual part of the case was that there was absolutely *no pain.*

This, I think, can fairly be called a case of painless precipitate labor. And I have often thought, as I have passed many a weary hour watching and waiting while some poor woman was suffering the pangs of a labor which, it seemed, would never end, that it was indeed a pity that all womankind had not been "built" as was the patient whose case I have related.

About two years later I was again summoned to attend her in labor. The premonitory bearing down had occurred, and an examination revealed the same condition of affairs as existed at her previous confinement. This time I remained. A few minutes later she again had uterine contraction, and upon examination I found complete relaxation of the soft parts, and the head was rapidly being expelled, the whole act of delivery being completed with the one contraction, and being as before absolutely free from pain. In both cases the child was of average size, and what seems rather unusual, there was not the slightest laceration of the outlet at either time.

The other case is also one of quite unusual occurrence.

During a severe thunder storm in the summer of 1886, I was called to see a woman who had been struck by lightning. The woman was a nurse, taking care of a confinement case which I attended a few days previous. During the storm the house was struck by a bolt of lightning, and a portion of the electric fluid was evidently attracted to the person of the nurse by several twenty dollar gold pieces which she had in her purse in the bosom of her dress. The coins were blackened and charred, the current from thence passing down her right leg and literally tearing the shoe off her foot, inflicting a severe laceration to the side of the foot. She suffered from severe nervous shock for several days, the laceration healed kindly, and in course of time she entirely recovered. It seems remarkable that she escaped death, although a number of cases are on record where persons were severely injured by lightning stroke without being killed outright.

During the same summer I was called to attend another case of lightning stroke. Two men had sought shelter from a severe thunder storm in a barn, which was soon after struck by lightning. One of the men was killed instantly, and a careful inspection of his body failed to reveal the slightest mark of injury. The other suffered from nervous shock, from which he entirely recovered in a few hours.

# UNUSUAL CASES IN PRACTICE.

BY DR. J. HARRIS JONES, WILKES-BARRE, PA.

READ SEPTEMBER 2, 1896.

*Mr. President and Gentlemen:*

I beg to submit to your notice this evening brief notes of two cases that occurred recently in my practice. Whilst they are not, in any sense, rare or unique in hospital experience, I think I am right in classifying them as somewhat unusual in a general practice of limited proportions. Both have a medical as well as a surgical aspect. The cases I wish to report are (1) malignant disease of the Sigmoid Flexure, and (2) a case of deep-seated abscess of the neck, probably caused by rupture of muscular fibres. I shall treat of the former firstly:

About two years ago I was consulted by R. H. R., aet. 52, married. He gave a remarkable history of longevity in his progenitors, but I could not elicit any evidence of malignant disease in any of them. Briefly recorded, the symptoms complained of were very similar to those of cancer of the rectum. Indeed, so closely did they simulate the latter that I had no doubt the disease was situated in that part of the intestine until I made a digital examination, which instantly revealed that my surmisings were wrong. The discharges from the bowels were invariably more or less bloody, and sometimes nothing but bright, uncoagulated blood escaped. A sense of discomfort was experienced at an early date in the abdomen, which became more pronounced in the neighborhood of the sigmoid. Scarcely at any time, however, could the pain be said to be definitely local. There was no appreciable growth over the infected part, but occasionally, upon deep palpation, I could detect a slight enlargement of the gut. In all probability this was appreciable when a slight damming of the foecal matter occurred. "Balooning" of the rectum was present, and this was the only abnormality detectable with the finger until a few months before the patient's death, when, by a bimanual examination, I thought I was able to touch, with the tip of my finger, a resistent body high up in the bowel. The sensation conveyed then was very similar to that of ballotment in an early pregnated uterus. He consulted an eminent Philadelphia surgeon, who concurred with the diagnosis made at

home. I believe, however, that the diagnosis was arrived at more by a process of exclusion than by actual objective evidences. The treatment of the case consisted in the giving of tonics and a liberal diet. The bowels were usually kept liquid by injections of warm water. They acted under this treatment very favorably until about a fortnight before the patient's death, when very pronounced symptoms of acute obstruction appeared. Anterior colotomy was resorted to; and, with considerable misgivings as to its propriety, an attempt was made to perform it on the left side. This was found impracticable, as the intestine was collapsed and lying deeply in the abdomen, being evidently held there by adhesions. (This was afterwards verified at the post-mortem). The cæcum was exposed, stitched to the abdominal parietis and opened immediately. The intestines were relieved of an enormous quantity of foecal matter. The results from the operation continued to be quite satisfactory, but the patient succumbed on the twelfth day from sheer exhaustion. P. M. appearances: The wound on the left side had completely healed. The artificial anus, established at the cæcum, was intact and firmly united through the whole length of the incision. No recent peritonitis was present. The sigmoid flexure was surrounded by a growth on its external coats, but did not invade the mucus membrane. The tissue investing the bowel was that of an encephaloid cancer.

*Remarks:* Cancer of the sigmoid does not occur nearly as frequently as that of the rectum. The symptoms of both diseases simulate each other very closely, and nothing but a tactile examination can clear up a diagnosis. The treatment of the disease is very unsatisfactory. Perhaps an early resort to operative measures is better than waiting for the development of urgent symptoms. Judging from the anatomical arrangements of the parts involved, I think the best treatment, in these cases, is to resect the bowel, cut out the diseased portion, and re-unite both ends, if feasible. I do not think that this last procedure can be done very easily if much of the intestine is diseased, owing to the limited movements of this portion of the alimentary canal. Failing in this, the next best thing I would be inclined to advocate is to establish an artificial anus. But an artificial anus is, at best, a very intolerable arrangement, and to a sensitive patient, an exceedingly revolting one. I think, after all, that the patient does not lose much by waiting

until urgent symptoms appear. The question of lumbar versus inguinal colotomy is yet unsettled. The latter is surely easier of performance.

### (2). DEEP ABSCESS OF THE NECK.

My report of this case is going to be very brief. The subject in whom it occurred was a young lady about 17 years old. Her health had been somewhat indifferent some days before she felt anything wrong with her neck. I was called to see her in March last, and elicited the following history: A few days before I saw her, she felt, while playing with her little brother, a peculiar snap in the neighborhood of her ear when in the act of stooping and slightly rotating the head in order to apply her ear to the keyhole of a door so as to hold a conversation with her brother who was in an adjoining room. From this moment her neck became very painful and fixed. An uncomfortable sensation soon appeared over that side of the palate and upper constrictor of the pharynx. Deglutition was difficult and painful to perform. There was evident tenderness below the mastoid when the finger was pressed inwards and downwards. The pain was of a neuralgic nature, and, at times excruciating. It extended into the ear and radiated over the side of the neck and occipital region. There was no evidence of ear disease and the teeth were sound. A slight fullness appeared, after a few days, on the outer side of the tonsil on the affected side. This was incised and about a teaspoonful of pus escaped. Improvement followed, but shortly it became evident that a deep-seated abscess existed somewhere in the deep muscles of the neck, and in close proximity to the base of the skull. The patient was becoming hectic. The abscess was opened after Hilton's method, the external incision being made about an inch below the lower border of the mastoid and close to the side of the outer edge of the sterno-mastoid muscle, by which means exit was given to nearly an ounce of pus. A probe, passed into the wound, indicated that the abscess had its origin somewhere near the side or in front of the foramen magnum. She recovered rapidly after the operation and is now in excellent health.

*Remarks:* Having seen, about that time, several cases of torticolis, accompanied by severe neuralgia of the spinal accessory and occipital nerves of an influenzal origin, I hesitated, for a time, in accepting the keyhole incident as the probable cause of the trouble. Eventually I accepted it, and I have no

doubt that the whole thing was caused by a rupture of some of the fibres of the rectus capitis anticus major muscle at or near its insertion upon the under surface of the basilar process of the occipital bone, near the pharyngeal tubercle. The presence of the small abscess at the upper part of the pharynx goes very much to strengthen this theory, and, of course, it would be impossible to assume that inquisitive poise of the head and neck previously described without causing a contraction of this muscle.

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DR. STEWART reported a case of strangulated hernia in a child five weeks old. He was called in consultation by a physician who requested him to come prepared to operate for strangulated hernia. An anæsthetic was given, and as the operation proceeded it was found very difficult to distinguish the sac in so young a subject. Owing to the narrowness of the aperture it was necessary to enlarge the opening so that the ring could be cut by sight. The replacing the intestine was exceedingly difficult. As a search of the literature of the subject will show, cases of hernia in patients of this age are very rare.

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## THE TREATMENT OF PUERPERAL ECLAMPSIA.

BY DR. W. H. FAULDS, LUZERNE, PA.

READ SEPTEMBER 16, 1896.

A few years ago I had the pleasure of reading a paper before this Society on the Albuminuria of Pregnancy, in which I endeavored to present this subject under the usual headings of etiology, pathology and treatment. Subsequent experience has induced me to supplement that effort by preparing a short paper on the chief symptom of this affection, puerperal eclampsia. Although this pathological condition must have received the attention of medical men from a very early period, the mortality has been such that even now, with all the advancement in modern medicine so much uncertainty attends the treatment of puerperal convulsions as to make it one of the most formidable complications of the lying-in room. But, de-

spite the importance of the subject, recent advancement in abdominal surgery, aseptic and antiseptic midwifery, as well as many other themes that have come prominently before the profession in the past decade, seem to have crowded this into the background and divested it of the prominence to which it is entitled. But notwithstanding this seeming indifference, we believe that with all the experience that comes from a large obstetric practice, he who would treat intelligently and successfully these cases, must be able to apply skillfully and with discrimination all the resources at his command.

A plea then for the discriminate use of drugs and the skillful application of the means used in the treatment of this affection, is my claim to your kind consideration. I know full well that in extolling the virtue of any medicament we expose ourselves to the criticism of those who sometimes declare their lack of confidence in the therapeutic value of all drugs. But I want to say right here that I believe there is less scepticism in medicine now than there was twenty years ago, and that those most sceptical are by no means the most active, observing and painstaking members of our profession. There is no doubt that in estimating the value of any therapeutic agent by the result obtained, there is great chance for error, and this fact has made the older men in the profession wonderfully conservative and sometimes sceptical as to the healing power of our remedies. But they should remember that there is also great danger of the experienced physician going to the opposite extreme by falling into the lazy habit of trusting to nature when prompt and heroic treatment might save life. In other words, while there is a possibility of the young practitioner endangering the life of his patient by over medication, the delay or hesitation on the part of the older members of the profession to use a remedy because they have several times failed to use it successfully, may be an equally serious blunder. The experienced physician should know that while the same drugs do not always meet the same indications, a change to another of its class, or the same remedy administered in smaller doses, or, if you please, a change to one of almost opposite therapeutic action, will sometimes relieve so promptly as to leave no

doubt in the mind of the attendant that the remedy used in some way assisted nature in her efforts to overcome the pathological condition present. Medical men of to-day know too little of the power of medicine to relieve certain symptoms, under all conditions, to pass judgment upon the therapeutic value of any drug, and if the sceptics in medicine would spend more time in carefully noting the action of their remedies in different doses (larger or smaller as the case may be) as well as the action of the same remedies in different constitutions and conditions of the system, they might find greater opportunities for observation and much less time for criticism. In short, so complex are the processes of digestion, assimilation and tissue metabolism, and so varied are these processes in disease and disordered function, as to render all the theories of the would-be scientific physician almost without value in the application of remedies to the cure of disease. Occasionally, it is true, observation and experience prove the correctness of our theories, but in the vast majority of cases our remedies must stand or fall by the standard born of experiment, observation, experience and common sense.

While we believe these remarks pertinent concerning general medicine, we also believe they apply with equal force in the treatment of puerperal eclampsia. As in general medicine, so in the treatment of this condition, no one remedy can always be depended upon to relieve what seems to be the same pathological condition or functional disturbance. Thus we find that while one practitioner regards morphia as an almost never-failing remedy, another pins his faith to veratrum viride, another to chloral hydrate, while others in turn claim chloroform, pilocarpin, blood-letting, croton oil, the hot pack, etc., as their chief reliance. In our college days, blood-letting was the vaunted remedy. Professor Penrose teaching that "unless you bleed, your patient will die" must still be fresh in the memories of those who listened to that eminent teacher of obstetrics a quarter of a century ago. In 1880, Dr. Clark, of Owego, N. Y., regarded morphia hypodermically in doses ranging from one to three grains as almost a specific. Another writer makes the statement that if the pulse rate is kept below

sixty per minute by veratrum viride, the convulsions will not recur. Chloral hydrate in thirty grain doses by the rectum, was the most reliable remedy in the practice of Dr. Goodell, and I shall always remember the hearty indorsement by Dr. Mayer of the use of pilocarpin in a case of my own which recovered after twenty-three convulsions. So with the other remedies mentioned, each has had its advocates and each in turn has been condemned. How shall we reconcile this difference of opinion? Certainly we cannot discard the testimony of those who have been successful in the use of their favorite remedies. Neither should we doubt the sincerity of those who claim to have been unsuccessful with the same means where the conditions seemed almost identical. So that we are forced to the conclusion, either that there was a difference in the severity of the disease and the constitution of the patient, or that the remedies failed because they were not used at the proper time, in proper doses, or with due regard for the condition of the patient. All are undoubtedly important factors.

To declare a remedy worthless because we have not been as successful in its use as others, is to assume identity of conditions and treatment. In other words, before we may condemn a line of treatment in which others have been more successful than we, we must be sure that our patients are alike in every particular, and that the treatment has been in every respect the same. Such an assumption, it is needless to say, would be an absurdity. The same remedies used by different physicians will produce different results, not only because of individual peculiarities, but for the reason that we sometimes fail to meet indications at the proper time, and lack the foresight that others of the profession possess. It is a well known fact that no two physicians attach the same importance to symptoms or meet them with the same remedies in the same doses. And, have we not a right to conclude that these are potent factors for good or evil, at the same time that we take into consideration the inherent peculiarities of the patient? And is it not as fair to assume that the mortality rate is influenced by the proper use of drugs at the proper time, along with a correct appreciation of the differences in constitutions, as to attribute

the results to the difference in the severity of the disease? These are questions that every day confront the conscientious physician, and while we are often in doubt as to the benefit derived from treatment in typhoid fever and other self-limited diseases, the waiting and anxious watching for the effect of remedies, at the bedside of over twenty cases of puerperal convulsions, has convinced me of the value of remedies in this condition, when used with discretion and discrimination.

Let us now consider in greater detail some of the remedies that have been vaunted, abused and discarded in the treatment of this malady. Years ago, when mothers of vigorous constitutions, because of out-door employment and exercise, could bear the loss of blood with less injury than now, blood-letting may have been excellent treatment. But, the lowered vitality of the average American mother of to-day would seem to be a contra-indication to the application of this once, perhaps, useful therapeutic agent. But to be practical, let us see what the older writers, who practiced this art, say of its use and abuse. And here let me say in parenthesis, keep your old books if you have any and read them. It is just as important to read what was written half a century ago as it is to read what is being written now. Besides, the information you get from this source may prevent you from getting a swelled head when you think you have discovered something new in practice.

But to return to our subject. Nearly forty years ago Dr. Bedford, of the University of New York, said, in a lecture to his class: "If you leave this University with the conviction, too often sadly impressed upon the minds of some practitioners, that the reliable remedies in puerperal convulsions are blood-letting and opium, it is reasonable to suppose that one or the other of these agents would be immediately resorted to. Let us for a moment pause and examine this point. This examination may at some future time serve you, and protect your patient against the fatal consequences of stereotyped practice. Here, then, is your patient, in gestation and attacked with convulsions; the instant you approach her, true to the undying instincts of routineism, you call for a bandage and basin; the bandage is arranged, the basin in readiness, and the lancet is

plunged into the vein. The blood flows, the patient faints; soon after reaction comes on, there ensues another convulsion more marked than the preceding. You have not taken away blood enough, whispers the fatal delusion—routineism! The ligature is again applied, the orifice opened, and slowly runs the current; syncope follows; the spark of life is again rekindled by a feeble reaction; another convulsion, and speedily death closes the scene. The practitioner who has an abiding faith in blood-letting, as the only element of hope in puerperal convulsions, would, if consistent, say to the disconsolate friends, 'Oh! if I had seen the case at the commencement, I should undoubtedly have saved life!'"

"So far, gentlemen, from depletion being indicated in the case just cited, it may, peradventure, be that the resort of the lancet is the true cause of death. I will explain why this might be so. Suppose, for instance, the patient, from antecedent disease, hemorrhage, or from any other cause, should exhibit an example of anæmia; in such an event, this very anæmic condition may be one of the essential sources of the convulsions. What then becomes of the potency of blood-letting in a case like this? Its only potency consists in the prompt extinction of life, through the aggravation of the anæmia."

Dr. Bedford further says that the only indication for blood letting in puerperal convulsions is where the patient is plethoric, with a bounding pulse and flushed countenance. This condition has never existed in any of the cases I have yet seen. I have quoted at length from Dr. Bedford's work for the reason that there seems to be a tendency on the part of some of our members to return to this method of practice in these cases. My own experience with blood letting in these cases has been *nil*, except that I once saw a case where, after five or six convulsions, the patient was bled to the extent of about twenty ounces; after which the convulsions recurred more rapidly and with greater severity. After about three hours the vein was again opened and about sixteen ounces of blood allowed to flow. The convulsions then recurred with still greater frequency. Fortunately by this time the os was dilated, the forceps were used, and the convulsions ceased with the delivery

of the child. The mother was a woman of great vitality; had she not been, I question whether she would have survived the treatment. The delivery of the child undoubtedly saved her life. Blood-letting may once have been a valuable remedy in these cases, but when the older writers tell us that under its use the mortality was from 30 to 50%, it certainly would not now be classed among the very successful remedies.

Morphia in large doses has been recommended by Dr. Clark of Owego, N. Y. In a paper read by him and published in the *Journal of Obstetrics* for July, 1880, he regards morphia as a specific and vastly superior to chloroform, bromides, veratrum viride, chloral, croton oil, nitrite of amyl, alterative diuretics, pilocarpin, &c. He recommends as a commencing dose one and a half grains of morphia hypodermically, and should the paroxysm return, any time after two hours, this dose should be repeated. He says, "This dose may look large, but I am almost willing to swear that twice that amount not repeated would do no harm to a patient in a strongly eclamptic condition." He declared that since he adopted this treatment this disease has been shorn of its terrors. The tolerance of the system for this drug he likens to its use in peritonitis, alcohol in typhoid fever, and other states of great exhaustion or depression.

Nothwithstanding the very positive statement of Dr. Clark, this treatment has been severely criticised, and while it is in many cases a remedy of great value, I believe its use, like all the remedies used in this disease, is only of secondary importance compared to manual dilatation of the os and forced delivery. While this is being accomplished the sensibility of the nervous system should be blunted and the convulsions concontrolled; and there is perhaps no other remedy which does this so successfully and with so little depression as morphia in full doses. Some fear the use of morphia in puerperal convulsions on account of the condition of the kidneys, but my experience with it in this affection, as well as in chronic Bright's disease, in doses of from one-fourth to three-fourths of a grain, has led me to use it without fear of any untoward effects. I have never given it in the very large doses recommended by

Dr. Clark, but should not hesitate to do so were the convulsions severe and recurring rapidly. I am well aware that morphia is considered by recent medical writers a dangerous remedy in the treatment of this serious condition, but the absence of ill effects in quite a number of cases in which I have used it, leads me to believe that the objections urged against its use are based upon theory rather than practice. Again, we can readily understand how the profound stupor in some of these cases might be mistaken for morphia narcosis.

One of the worse cases of uræmic coma I have ever witnessed occurred in a primipara to whom no morphia had been administered. In one case of post partum convulsions, in which one-half grain of morphia hypodermically had been given, the patient became conscious between the paroxysms for several hours after its administration; after which the convulsions came on at intervals of fifteen minutes, and the patient became so profoundly comatose that the eyeballs were insensitive to the touch. Had these symptoms followed closely the dose of morphia, they would in all probability have been attributed to the use of that remedy.

I might mention other cases which would help to prove the truth of the statement that the natural symptoms of uræmic coma so nearly simulate morphia narcosis as to make it difficult to differentiate one from the other. It is true that the pupils are usually dilated in uræmia, but Osler says this symptom is not constant, and they may be widely dilated or of medium size. However, while I would not like to assert positively that morphia in one-half or three-quarter grain doses is without danger in this condition, I shall continue to use it until those who condemn it shall produce more convincing arguments than recent literature contains, or my own experience leads me to abandon it. One symptom mentioned by some writers, and which they use as an argument against the use of morphia, is a tense condition of the arteries and sphincter. In other words, the condition of the patient under morphia is one bordering on eclampsia, or, as one writer puts it, the convulsions continue under morphia narcosis. But may not this be due to the smallness of the dose? However, admitting these objections, even this condition is safer than one of clonic spasm.

It seems plain, from the testimony of different writers, that morphia has its indications and contra-indications in this affection, and until these shall have been made plain, we will be justified in taking our own experience and judgment as a guide in the administration of this remedy rather than in following the advice of text-book authors, whose ambition seems to be to discard the teachings of a previous publication rather than to give their readers the benefit of the accumulated experience of the profession.

Next to morphia comes veratrum viride. It is now known that it not only controls the heart action, but is also a nervous sedative of great value. Certainly nothing, venesection excepted, relieves the tense condition of the arteries and softens the pulse as does this remedy. And as some recent writers give spasm of the arteries as a cause of puerperal eclampsia, this would seem to be a rational basis for its employment. But, while it may have a wider range of therapeutic application than venesection, I should hesitate to employ it in cases of albuminuria with general anasarca in which there is a flabby condition of the whole muscular system, a watery condition of the blood, and a weakened condition of the heart. I should feel like reserving this remedy for cases in which suppression of the urine had come on as the result of cold or sudden chilling of the surface of the body—a frequent cause of albuminuria, and the resultant uræmia and convulsions. There is this to be said in favor of veratrum viride, that should its depressing effects become alarming, they can be easily overcome by a rectal injection of an alcoholic stimulant, or a dose of morphia hypodermically. Altogether, veratrum viride promises much in the treatment of this condition, but its indiscriminate use should be condemned.

Chloral hydrate has long had a place as a remedy for puerperal convulsions, but will not always control the paroxysms unless it is given in such large doses as to affect unfavorably the action of the heart.

Chloroform is another remedy of great value, but easily abused. Given in the stage of restlessness that often precedes a convulsive seizure, it, in many cases, lessens the number of

attacks. And yet, I saw one patient have twenty-four paroxysms in thirteen hours, when chloroform inhalations were kept up at intervals during the whole of that time. Certainly chloroform is too powerful a depressant to be used for so long a time without danger. We now come to a remedy of which a few years ago I was a warm advocate and to which I still cling. Notwithstanding all that has been said against pilocarpin, after twenty years' experience, I believe it to be one of the most valuable remedies we possess in the treatment of puerperal convulsions. I do not mean by this that I would use it indiscriminately or without due regard to its known physiological effects, or the unknown constitutional peculiarities of the patient. For instance, it should not be given to a patient with a very weak heart without first giving an alcoholic stimulant (4 ounces of whiskey by the rectum), or a hypodermic of strychnia. Neither should it be given in doses larger than $\frac{1}{12}$ to $\frac{1}{6}$ of a grain every twenty minutes until the indications are met, or its effect on the bronchial mucus membrane is slightly apparent. Given early in the attack, it produces free perspiration, often controls the convulsions for three or four hours, helps promote dilatation of the os, and contractions of the uterus. In the later stages, when the coma is deepening, the face is bloated and discolored almost beyond recognition, the breathing apoplectic, and the convulsions are recurring in spite of forced delivery and the intelligent use of all the vaunted remedies; in fact when you feel that you have exhausted all the resources of your art and are about to abandon the case as hopeless, give pilocarpin, noting the precautions given, and then watch carefully how the congested capillaries of the face are being emptied, the gradual improvement in the apoplectic breathing, the placid appearance of the countenance, and with these changes a cessation of the convulsions, and you will thank Heaven for this one exhibition of the careful and discriminate use of a valuable, but perhaps often abused remedy. I have never given pilocarpin when there was œdema of the lungs. But from recent experience I am inclined to believe that even in this serious condition its careful administration might possibly relieve the lung tissue of its excess of watery

fluid. One can readily understand how the watery exudations from the bronchial mucus membrane might be increased by pilocarpin, and the depletion thus produced relieve the œdema, the very symptom which we have been led to regard as a contra indication to the use of this drug.

Another remedy to which I want to call your attention is rectal injections of water. We all know that in a very large percentage of these cases there is almost complete suppression of the renal secretion, perhaps from acute congestion of the kidneys, and that a very important part of the treatment is the re-establishment of the functions of these organs. It is true that cathartics and the hot pack help to perform very important vicarious service. But the retained rectal injection of water (from a pint to a quart every hour or two) is not only an excellent adjunct to these remedies, but often superior to either or both. The absorption of this quantity of water from the intestines soon produces a copious flow of urine, and with it an improvement in the condition of the patient. The increased flow of urine is sometimes seen in from eight to ten hours after delivery without the use of these means, but there is a possibility of the patient dying of the convulsions or uræmia after delivery unless the kidneys resume their functions, and anything that favors the rapid restoration to the normal of these natural eliminators of the poison of urea, must certainly be a potent factor in the treatment. And right here, a pathological condition already mentioned, assists us in our efforts to introduce a quantity of water into the bowels, namely, the tense condition of the sphincter ani; perhaps always pressent. So constant is this symptom, that I have never known a rectal injection of water to be expelled, although repeated every two hours, while the necessity or its administration existed.

This brings us to the consideration of early and forced delivery. That this should be accomplished as soon as it can be done without serious injury to the uterus and vagina, is, I believe, in accord with the experience of the profession, as well as the teachings of all obstetric writers. Occasionally we see a case reported in our journals where convulsions occurred in

the later months of pregnancy, which were controlled by the usual remedies, the child carried to full term, and delivered without a re-currence of the trouble.

But, we believe, such cases rare compared to the large number in which the convulsions can only be controlled temporarily until delivery can be accomplished. As a rule, the paroxysms promote contractions of the uterus and flaccidity of the os, and, if continued for five or six hours, show very plainly the efforts of nature to stop the convulsions by expelling the contents of the uterus. So that in almost every case of puerperal eclampsia, whether at full term or not, the indication is to assist nature in her work by manual dilatations of the os and speedy delivery. But here again there are different methods of procedure, a right and a wrong way; in almost every instance Barnes' bags may be used to dilate the os, but the hand of the accoucheur is safer and more efficient than anything yet devised. With the hand in the vagina, if one finger can be passed through the cervix, and I have never found a case of puerperal convulsions where this was not possible, by a little manipulation two fingers may soon be inserted, and so on until the hand is passed into the uterus.

At this stage we are apt to use the forceps and spend one or two hours in dragging the child through the birth canal; often lacerating the os, vagina and perineum, and at the same time injuring the child beyond recovery. To me version by the feet has been attended with better results to mother and child than high forceps delivery. The breech of the child, I believe, is the best uterine dilator we have in these cases, and I have had fewer lacerations of the cervix,vagina and perineum and a larger proportion of living children by this method than by forceps delivery where the head was at the superior strait and had to be grasped with the instruments without regard to the position of the head of the child.

You have noticed that thus far we have said nothing regarding the preventive treatment of this affection. Although the most important of all, I know that you are perfectly familiar with the remedies used and of their almost never-failing efficacy. Personally, I have never seen a case of convulsions in a preg-

nant woman who was under treatment for albuminuria prior to and up to the time of her labor. I have known several instances in which death from uræmia occurred before and some time after delivery, but not from convulsions.

In conclusion, allow me to say, I have tried to present this subject from the standpoint of my own experience in the use of remedies that have served me well; the result being that out of twenty cases of albuminuria of pregnancy that terminated in puerperal convulsions, two died—one of œdema of the lungs, the other of acute mania. But in both cases death occurred at least three days after the convulsions had ceased. So I have yet to see my first fatal case of puerperal eclampsia.

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## HYDROPHOBIA.

BY DR. S. P. MENGEL, PARSONS, PA.

READ OCTOBER 7, 1896.

There are but few diseases that have excited greater attention, curiosity and study, at different periods in "Medical History," than has Hydrophobia. Again, there are but few diseases that have been better known and more graphically and intelligently described by ancient writers than has this disease. Indeed, Dioscorides, Caelius, Aurelianus, Galen and Avicenna, to whom we are most indebted for our knowledge of this malady, wrote accounts almost as full and accurate as are those of our modern writers of to-day.

Aristotle, in his "Historia Animalium," fourth century B. C., makes the first certain reference to this affection. He clearly describes it under the name of Lyssa, but curiously claims for man an exemption from the susceptibility to the infection by inoculation. Since this ancient period to the present day the outbreaks of this malady have been so numerous and widespread that all systematic writers on medicine, foremost among whom were Van Sweiten, Sauvages, Cullen, Fothergill, Mead

and Bardsley, have contributed to our knowledge on this subject.

Recent history shows Hydrophobia to be principally, not exclusively, confined to Europe until the early part of the eighteenth century, when it first appeared in America. The earliest scientific report of the disease that we can trace refers to wolves being afflicted with rabies in Fraconia in 1271, and we are told that, contrary to the usual habits of these animals, they spared the flocks, attacking the shepherds in the field, or following human beings into towns and villages. More than thirty men fell victims to these attacks.

The disease prevailed in Spain in 1500. In 1604 it prevailed in France, especially in Paris. From this time on we hear nothing of it until the hot summer of 1691, "when the crops withered for want of rain, animals died in great numbers, and dogs went mad." From this date until the close of the eighteenth century we hear of it appearing in the different European countries and in America, being rife in London in 1760, in Philadelphia in 1779, and in the West Indies in 1783.

At the beginning of the present century foxes were also found to suffer frequently from canine madness. These shy animals, when thus afflicted, boldly attacked men, cattle and dogs, biting them and thus inoculating the deadly virus.

The disease at this time continued to spread, cases multiplied, and the public became alarmed. So great was the consternation of the people of England, in 1830, that evidence of the subject was placed before a select committee of the House of Commons. The evidence and opinions of the leading surgeons of that country were taken, and an estimate of the public terror may be conceived by noting a few statements in the evidence taken. Mr. Youatt stated that he had applied lunar caustic to the wounds of about four hundred persons bitten by rabid animals. A surgeon of St. Bartholomew's stated that he had cauterized four thousand similar wounds. Mr. Henry Earle, also of St. Bartholomew's, gave evidence of the increase of Hydrophobia in man, claiming that he had seen twenty-five cases in twenty-five years, while his father had seen but one case in fifty years before his time.

That the disease has occurred with less frequency in England during the second and third quarters of the present century, as compared to the first, there is no doubt, and we are told that during severe outbreaks, in the different countries of the continent, the British Isles enjoyed almost entire freedom from rabies in dogs and Hydrophobia in man. This we may safely attribute to two causes, namely: first, the law abolishing the use of dogs as beasts of burden; and, second, the dog tax, although small, yet it no doubt tended to limit the number of valueless animals kept.

There is no climate immune from this disease, although more prevalent in the temperate regions than in the tropics or arctic regions; yet we find it in the tropical countries of southern China, India, West Indies and Brazil, as well as in the cold northern regions of Greenland, Lapland and Siberia. It might be mentioned that many islands in the temperate regions have until recently maintained an immunity against rabies. This we know to be due, not to any climatic influence, but the fact that the rabic virus had not yet been introduced. When once the infected dogs were taken to the islands, Hydrophobia became as prevalent in these as in other countries.

There is but one cause of rabies, namely, the inoculation of the rabic virus. We shall, however, briefly consider a few of the many conditions which are believed to exert favorable influence in the extension of the disease. Climate exerts no influence on the malady. The East and West Indies, Syria, Egypt, Siberia, and South American countries, formerly thought to be exempt from this disease, are now known to suffer, and those countries still enjoying immunity do so, as has been stated, simply because the morbid germ has not yet been introduced.

Certain seasons show a wider distribution of the disease than others. It seems to be the popular opinion that dog-days, or the hottest days of summer, favor the extension of the disease. Andry, in 1780, observed that the coldest and hottest months furnished the least number of cases, and Hurtel D'Arboral showed that in France the largest number of cases of canine madness occurred in May and September. Bouley's statistics

show that the majority of cases occur during March, April and May, while Boudin, in his table, shows the greater number of men affected during June, July and August.

Hunger, thirst and spoiled food are considered by some as causes of rabies. Dogs have been cruelly destroyed by starvation and thirst under the hot rays of the sun, but no rabies developed. Exclusive diets of spoiled meats and other putrid foods have failed to produce the disease.

Males are more commonly affected than females; but that sex does not protect against the inoculated virus, is proven by the production of the disease in castrated dogs of both sexes by inoculation. Severe suffering, violent rage, and special breed cannot be considered as exerting any influence in the production or spread of the disease. The popular ideas that the bite of a skunk, or the bite of a violently enraged dog, will cause Hydrophobia, or that a person bitten by a dog—which at some subsequent time goes mad—will develop Hydrophobia, are delusions.

It has been claimed by a number of observers that the disease may arise spontaneously. This, however, is denied by the majority of modern authorities. There are undoubtedly many cases the direct inoculation in which it would be difficult to trace. Again, unless the attack of a rabid animal has been observed, owners often claim for their dogs the spontaneous origin of the disease. Yet a rigid examination would, in all probability, reveal the source of inoculation. Conceding then, that Hydrophobia is only transmissible by inoculation, the question would naturally suggest itself, "How may this occur?" The most common channel is the saliva. The bronchial mucous has, by experiment, been found to be virulent in cases in which the saliva was non-virulent. The flesh of rabid animals has, when eaten, produced the disease, although this, by all probability, occurred because of some abrasion along the alimentary canal, thus furnishing a "nidus" for the inoculation of the poison. There is no direct evidence to prove that either milk or the spermatic fluid conveys the rabic germ. The breath and perspiration do not transmit the disease. The blood undoubtedly contains the virus and forms a medium for the

transmission of the disease, as shown by Eckel, who successfully inoculated a sheep with the blood of a rabid goat, also a dog with the blood of a rabid man. Lafossa produced the disease by inoculating a dog with the blood of a rabid dog. Only in the last stage of the disease, however, is the blood believed to be virulent.

The exciting cause of rabies, is, without doubt, a micro-organism, although up to the present time the germ has not been demonstrated. A crystallizable ptomaine of poisonous properties has been isolated from the brain and medulla oblongata of rabbits suffering from rabies, by Aurep, of St. Petersburg. Pasteur's experiments, we shall consider, when we speak of the prophylactic treatment of this disease.

Not all persons or animals bitten by rabid dogs contract the disease. Out of five hundred and fifty-five dogs said to have been bitten by rabid dogs, one hundred and eighty-eight contracted the disease, and of eight hundred and ninety persons bitten, four hundred and twenty-eight took the disease. Such statistics, however, can not be relied upon, some of the animals reported to have been mad may have had some other disease, while many of those bitten by really rabid dogs may have sustained simple bruises, not abrasions. In other cases the virus may have been cleaned from the teeth by passing through wool clothes, hair or even the flesh of another animal previously bitten. The clothes often act as a protective against the poison. Bouley's statistics show that out of thirty-two persons bitten in the face, twenty-nine contracted rabies; of seventy-three bitten on the hands, forty-six died; of twenty-eight bitten on the arms, eight died; of twenty-four bitten on the lower limbs, seven died, and of nineteen bitten on the body (usually multiple wounds), twelve died.

In man the period of latency of the poision, after the reception of a bite from a rabid animal, depends, according to Mr. Foster, upon the circumstances under which the bite is received, and also on the part bitten. It varies from four weeks to eleven months. Cases are reported to have occurred in a much shorter time, while Fereol, Schule and Chabert report cases in which the periods of incubation were two and one-half,

seven and twelve years respectively. As such prolonged periods of incubation, in animals, are unknown, and as none of these reports have been verified by successful inoculation on animals, they are, to say the least, doubtful.

As regards the gross pathological anatomy, we may say that hardly a single lesion is constant in all cases. The following may, however, be considered as common to both man and animals: Great emaciation, early decompositions, citatrix in majority of cases hardly noticeable, a white skin with congested superficial veins, and dark livid hue of external mucous membranes. The mucous membranes of pharynx, larynx and bronchi is reddened and covered with a thick, tenacious mucopurulent secretion. Lungs are congested, stomach is empty, as is usually the small intestine. Both are congested, and extravasations of blood are often found in the former. Mesenteric glands are enlarged. Heart and large blood vessels are filled with thick, dark blood. The liver, kidneys, brain and meninges are hyperæmic. Congestion and points of hemorrhage are found in irregularly distributed areas in substance of spinal cord. Bladder is usually or altogether empty.

Germano and Capobinaco, of Naples, studied the pathological anatomy of spinal cords of dogs and rabbits, and found that there existed an acute inflammation of the cord tending to disintegration of the nervous elements and a hyperplasia of the neuroglia to replace them. The areas of congestion and points of hemorrhage, above spoken of, were found to be extensively infiltrated with leucocytes along the perivascular spaces and around nerve cells, while the endothelium of the vessels was proliferated. They also observed atrophy and vacuolation of the nerve cells leaving open spaces in the gray matter. The nerve fibers showed varicosity and vacuolation of the axis cylinders, with degeneration of the myelin sheath and increase in the neuroglia.

In speaking of the symptomatology of the malady we shall confine ourselves to the symptoms of Hydrophobia as occurring in man. With the exception of a few cases, in which the disease sets in suddenly, the development of rabies is usually preceded, for a few days, by a feeling of general malaise, with,

probably, chilliness, flushes and vertigo. Often a tingling or prickling sensation, with more or less pain about the region of the bite, is the first symptom. In these cases there is usually a slight redness and perhaps slight swelling of the part, with engorgement of the neighboring lymphatic glands. Headache, anoreria, restlessness and insomnia are symptoms of the first stage. The voice now becomes husky, temperature rises slightly, and pulse is somewhat accelerated. There is often great sensibility, the patient becoming greatly distressed by any bright light or loud noises. The larynx is usually injected, and the first symptoms of difficult deglutition are experienced. The restlessness now increases and patient becomes markedly irritable. Though suffering from intense thirst he is afraid of water, and any attempt at deglution will cause the constrictive spasms of the pharynx and respiratory muscles. These spasms, constituting the most distressing feature of this malady, are exceedingly painful and accompanied by intense dyspnœa, even if the glottis is widely opened or tracheotomy performed. They are not only occasioned by attempts to swallow, but also by any excitement, sudden fright, loud noises, or even a breath of air. The dyspnœa is usually extreme during the convulsive seizure, there being a gasping respiration with the utterance of inarticulate sounds, usually likened to the barking of a dog. During the second stage of the disease the paroxysms increase in frequency and severity, and are aggravated by any attempt to restrain them. The patient's face bears an extremely anxious appearance, the facial muscles being contracted, nostrils widely dilated, and eyes, with widely dilated pupils, are open and staring.

As the disease progresses hallucinations and delirium often become prominent symptoms, and the sufferer may become exceeding aggressive. Usually, however, at the subsidence of the paroxysm, he becomes conscious, expressing great regret for his actions, and warning those about to be on the alert at the appearance of the next convulsion. His mouth fills with a clammy viscid saliva, which is forcibly expectorated. The pulse increases in frequency, often reaching 150 to 180 per minute, and is hard and small. Constipation is usually present.

Urine is often discharged involuntarily. The temperature usually varies from 100-102, some cases being afebrile, while others present an extremely high temperature. In the final or paralytic stage the restlessness decreases, the paroxysms are less frequent, anxiety and irritability are lessened, the patient becoming more quiet, passes into unconsciousness. The respirations, though more frequent, are easy. Eyes are fixed and pupils contracted; surface of the body is covered with a profuse perspiration. The lower jaw drops and saliva dribbles from the mouth. Heart becomes more and more enfeebled, and patient dies by syncope.

Before speaking of the treatment of rabies, we desire to call attention to the recent cases of Hydrophobia which occurred in the borough of Parsons, Pennsylvania. This borough contains upwards of three thousand inhabitants, and, as is often the case in places of this size, it may boast of containing almost that number of dogs. In the early part of July, 1896, in a large field kept for the pasturing of cattle, one of the cows was noticed to act strangely; her symptoms, which we shall not here enumerate, increased, and in a day or two she was pronounced to be suffering from rabies. She, for several days before being destroyed, was kept in the field in the presence of several other cows. In the course of a week a second cow, pastured in the same field, showed symptoms similar to those of cow number one, and was shot on the second day after the manifestations of her first symptoms. Cow number three took the disease a few days later, and instead of being destroyed, as were the other two, she was immediately stabled and kept so until her death, which occurred at the close of the third day of the disease. A dog, whose owner resides close to the above mentioned field, manifested symptoms of rabies about this time, and, after several attempts to bite its master, was destroyed. A second dog was destroyed after biting two persons, one of whom has thus far shown no symptoms of the malady—the other having contracted Hydrophobia seven and a half weeks after the reception of the injury.

We have here a series of cases, all of which, with the exception of the case occurring in man, occurred within a period of

two weeks. The cows were pastured in the same field, and one of the dogs attacked, as has been mentioned, lived close to said field. No inoculations were made to prove the presence of rabies, but as the three cows affected presented precisely the same symptoms, and as they occurred under the same conditions and surroundings during the same period of time, and as the disease in the third cow, which was not killed, proved fatal on the third day, we believe we are justified in claiming them to be genuine cases of Hydrophobia. The dogs fortunately were kept chained during their illness, and both destroyed in the early period of the disease, one being killed on the manifestation of the first symptoms of the malady, the other after having bitten two persons; one probably before the disease was present, the other during one of his poroxysms. Both persons were bitten on the hand, and the latter developed the first symptoms of Hydrophobia exactly fifty-two days after the reception of the bite. He died on the third day of the disease. This is the case which I reported to you a few weeks ago under "Unusual Cases in Practice," and, by request of the Society, is here incorporated in this paper:

About two months ago, Mr. P. H., aged 35 years, a resident of Parsons, Pennsylvania, while attempting to administer some drug to his dog, was bitten in the hand, causing an extensive lacerated wound between thumb and index finger. The wound, I understand, was treated by a physician and healed, as a wound of this character ordinarily does. I understand the wound was not cauterized. On Tuesday and Wednesday, August 18th and 19th, he seemed irritable, fretful and somewhat depressed. His appetite was poor. Thursday, August 20th, he experienced a tingling or prickling sensation in the fingers of the wounded hand. This was followed by pains extending up his arm and radiating to shoulder and chest of same side. These symptoms increased until Friday morning, when he experienced difficulty in swallowing while breakfasting. There was no redness or swelling of wound noticed; neither was there at any time of the disease any perceptible enlargement of the neighboring lymphatic glands.

Friday, about 11 A. M., while at work in the mines, he was suddenly seized with a spasm of the pharynx. He was then removed to his home, and from this time on until shortly before death (Sunday evening, August 23d) the spasms, which increased in

frequency and occurred with greater severity, were among the most prominent symptoms. They were immediately occasioned by any attempt at deglutition, often the mere sight of liquids (especially water), slight drafts of air, noises in room, or anything causing him the least excitement. Frequently the convulsion was so severe as to require several attendants to keep him from injuring himself or those about him. During the paroxysm he suffered intense dyspnœa with threatened suffocation. Between the paroxysms he was conscious. He complained much of hunger and thirst, especially on the last day of his illness. Pulse was small and rapid, ranging from 150 to 160 beats per minute. Temperature ranged from 101° to 103°, except on the morning of August 23d, when the thermometer registered 106°. A violent, almost maniacal, delirium was now present and lasted for several hours, when the temperature was reduced to 102.5. Skin was covered with perspiration and intensely hyperæsthetic. Unexpectedly touching him, attempting to mop his brow, or to have him expectorate in a cloth, caused a precipitation of the convulsions.

The contracted facial muscles with their livid appearance, the dilated nostrils, the restless, injected, staring eyes, with their widely dilated pupils, presented a picture of anxiety and horror more dreadful than which it would be impossible to behold. The mouth of the patient would fill with a tenacious and viscid saliva, which, after hawking, was forcibly expelled on every side, over his clothes, bed-clothes, and even those who stood near. His voice was hoarse and husky. Marked restlessness and nervous irritability existed. Patient frequently changed his position, once lying in bed, then sitting up, or perhaps walking about the room. His face, arms and legs were disturbed with involuntary movements.

Aug. 23, at 6 P. M., after several severe convulsive seizures, the involuntary movements ceased, patient remained quiet, eyes were staring and fixed, jaw was dropped, expectoration was discontinued, skin was covered with a profuse perspiration, and patient died of exhaustion about two and one-half hours later.

The question now arises, How were the cows and dogs infected. As the symptoms in one of the dogs and in cow number one appeared at about the same time, it is natural to suppose them to have been infected at the same time and probably from the same source. Cows numbers one and two and the second dog affected may possibly have been inoculated

at the same time, the period of incubation having been longer, or possibly the inoculation occurred from cow number one, which was pastured with the other cows, or from the first dog affected, which was running at large until the development of the first symptoms of the disease. We have attempted, but failed, to find the source of the infection, but that it was probably caused by some rabid dog or animal inoculating them as he ran along, would appear to be the most plausible theory of the infection.

As all cases of rabies in man, when once established, invariably prove fatal, and as but a small proportion of those bitten by rabid animals actually contract the disease, we shall not here discuss the curative, or rather the palliative, treatment, but shall, in conclusion, confine ourselves to the preventive or prophylactic treatment of this malady.

As the disease in our day can be considered to develop only as the result of contagion, we my safely say that by suitable measures it may be entirely suppressed or even excluded from any country. Thus we find Australia, Tasmania and New Zealand enjoying immunity against rabbies, while it exists in countries in the same climate and latitude in both hemispheres. The universal muzzling of dogs in Berlin, and also in Holland, caused the elimination of the disease—Berlin enjoying immunity for nine years, the period during which the muzzling law was enforced. Knowing, then, that nearly all cases of hydrophobia in both men and animals are caused by the bites of rabid dogs, we, in order to prevent the diffusion of this malady, must necessarily turn our attention to the canine fraternity. It is an indisputable fact that every city, town, borough or township contains a superfluous number of the canine species. How often among the poorer classes do we find two, three, or even four or five dogs, kept by a single family. The greater number of dogs in a community, the greater will be the opportunity for the diffusion of the rabic germ when once that has been introduced. We believe that with careful legislation regarding the importation of dogs from countries where rabies is known to exist, the imposition of a heavy dog tax, and the universal muzzling of dogs in all communities where Hydro-

phobia existed within a year, we should be able to greatly reduce the number of cases occurring, and probably eliminate the disease.

This brings us to the consideration of the treatment of bites, the main object of which is to seek the eliminatian or destruction of the poison. If the wound be on a limb, the circulation of this part should be arrested by means of a tourniquet placed at once above the wound. Squeezing or wringing the wound, as well as sucking or cupping the part, are commendable, and one or all should be practised in cases where cauterization is not immediately done. Cauterization of the wound is the only efficient means of destroying the rabic germ, and no other measures should be allowed to delay the use of these agents. The hot iron, heated to a white heat, may be brought in contact with all parts of the wound. The solid stick of nitrate of silver, chloride of zinc and potassa, crystals of the sulphate of copper or iron, the liquid caustics, as mineral acids, butter of antimony, as well as the galvano cautery, have each had their advocates, and the superiority of one over the other, when applied under precisely the same conditions, may be questioned. Thorough and hasty cleansing with a strong solution of bichloride of mercury, 1-500 if the wound be not too large, followed by the thorough application of the solid stick of nitrate of silver, and the subsequent antiseptic dressing of the wound we would recommend as a routine treatment for all wounds caused by the bite of dogs or animals. We might incidentally mention that with the cauterization of the wound the physician should not hesitate to insure the patient of the efficacy of the treatment adopted and assure him of a speedy and permanent recovery.

The eminent French scientist, Pasteur, has discovered a mode of preventing the development of Hydrophia, in both man and animals, by inoculation. According to this experimenter, the virus of rabies in found chiefly in spinal cords, though it also exists in the nerves and salivary glands of the animal affected. Inoculation of the virus into the nervous centres of the animal by trephining produced the furious form of rabies, while intravenous injections usually caused the dumb variety. He dis-

covered that the intensity of the virus is modified by the nature of the animal through which it passes, thus the virulency of the poison being greatly increased by a series of inoculations upon rabbits and guinea pigs, while, by a similar series upon monkeys, the virulency is greatly diminished. By the use of a weak virus first, followed by a course of successive inoculations, each a little stronger than the preceding one, insusceptibility of the animal to rabies may be induced. Pasteur secures, by successive inoculations upon rabits, a virus which, after seven days' incubation, produces rabies. A series of flasks, in which the air is kept dry with caustic potassa, are prepared, and into one, on each successive day, he suspends a section of the spinal cord freshly taken from a rabbit, dead of seven days' rabies. In this way he secured a series of viruses of gradually lessening strength.

In order to immune a dog from rabies he injects hypodermically a syringeful of bouillon containing a fragment of cord which has lost all its virulence by drying; the next day he repeats the injection containing a portion of the cord kept two days' less time; the third day with one of four days' less time, and so on, until the employment of an almost fresh cord completes the series of inoculations. He adopts a similar plan in inoculating human beings, and believes that the development of rabies in those who have been bitten by rabid animals may be prevented by these injections provided they are begun with sufficient promptness.

Puscarine and Vesico experimented with spinal cord emulsions, in which heat was used as the attenuating agent instead of simple desiccation. Babes and Lepp claim the possibility of obtaining some protection against the disease by injections of blood taken from an animal previously inoculated against rabies by Pasteur's method.

Tizzoni and Centanni experimented with a serum prepared by a method much like that by which the tetanus and diphtheria antitoxic serums are prepared. They found that, first, a lethal dose of rabic virus, mixed with a definite quantity of the serum and injected into a rabbit, did not cause any symptoms of Hydrophobia, though some of the rabbits were kept

under observation for four or five months; second, that a small quantity of serum, if injected at once, served to neutralize the effect of a lethal dose of the poison, and if injected at the end of the first half of the period of inoculation it required to be multiplied only six or eight times, whereas in diphtheria the dose has to be multiplied twenty to one hundred times, and in tetanus one thousand to two thousand times, during the latter stage of the incubation period. If these experiments prove successful, as we believe they will, the advantages of this treatment would be: *First.* The patient could be treated at his own home. *Second.* Any physician could use the remedy. *Third.* The treatment could be begun almost immediately. *Fourth.* A permanent form of the serum could be prepared to remain active for a long period of time.

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## NASAL REFLEXES.

BY DR. ERNEST U. BUCKMAN, WILKES-BARRE, PA.
READ OCTOBER 21, 1896.

The study of no subject presents a more broad or interesting field than that of reflex phenomena. These phenomena are either physiological or pathological. I think I am correct in saying that all of the functions of involuntary muscles are reflex; and very many voluntary muscular movements are reflex, or become so in the course of time, either wholly or in part. A familiar instance at the present day, and one with which many of us have had experience, is bicycle-riding. Until this becomes a reflex act it is practically an impossible one. Walking and respiration are other familiar examples of reflex acts of voluntary muscles.

The motions of the iris and muscles of accommodation, the movements of the stomach and intestines, defecation, micturition and sneezing are equally familiar as examples of physiological reflexes of the involuntary muscles.

Vomiting of pregnancy; headache from uterine disease; acute coryza, eye-strain, and disorders of the stomach; asthma

of nasal origin; convulsions in children from intestinal affections; the pain in the knee from hip-joint disease, and the pain under the scalpula when the liver is the seat of the trouble, are well known as pathological reflex phenomena.

Bosworth says: "In order to have a true reflex phenomenon we must have (1) a sensitive nerve fibre, connected with (2) a sensitive nerve cell or mechanism, which in its turn is connected with (3) a motor fibre, supplying some motor organ." As pain is one of the manifestations of a pathological reflex, I would add, as a part of the third branch of the reflex arc, a *sensitive* nerve fibre distributed to some portion of the body remote from the sensory fibre of the first branch of the arc.

The mucous membranes are the most richly supplied with sensory nerves, hence it is not surprising that a vast number of reflexes should originate in these parts. I will merely mention a few that have been observed as arising from the nasal mucous membrane, quoting from Dr. Elsberg, in a paper read before the American Laryngological Association in 1883.

These are, "(1) melancholia, (2) chorea, (3) reflex epilepsy, (4) neuralgia (especially supra-orbital headache and migraine); (5) gastric disturbances and diseased conditions of the upper digestive tract, as reflex pharyngitis, uvulitis, tonsillar enlargement; (6) uterine disorders, and affections of the genito-urinary mucous membrane; (7) pain and disordered functions of the organs of sense, especially of smell and taste, but also of hearing and sight; (8) numerous affections of the extra-nasal respiratory tract, and organs of voice, among which are especially prominent the various alterations of the speaking and singing voice, laryngeal cough, glottic spasm, and bronchial asthma; (9) redness of the surface of the nose from nasal obstruction, and (10) a curious instance of reflex disorder in a man suffering from chronic nasal disorder, who always had an attack of sneezing during coitus."

I need scarcely assure you that it is not my intention to discuss all of these phenomena. Dr. Mackenzie, of Baltimore, in an article in the Reference Hand-book, discusses the entire subject very fully.

There is one class of cases, however, that I have observed,

which he merely mentions, and on which I have failed to find any discussion, and it is to these that I shall call your attention. I refer to a form of headache due to hypertrophy of the middle turbinated bones, and not associated with nasal symptoms. The only reference that I have been able to find to headaches from this form of hypertrophy is in a paper by Dr. Harrison Allen in the *Medical News* of March 13, 1886, and he speaks of nasal symptoms as a prominent feature.

About two years ago a lady consulted me in reference to a pain in the head which she described as *neuralgic*, and which she attributed to eye-strain. She had a slight error of refraction, which had been corrected. I made a careful re-test, making a change in one lens, but this failed to give relief. The usual remedies for neuralgia also failed to give relief. She had some catarrhal trouble, of which she did not complain, and at each visit I treated her nose and ears. In doing this I noticed some hypertrophy of the anterior portions of the middle turbinated bones. To these I applied the thermo-cautery lightly. At her next visit, much to my surprise, she reported great relief from the pain in the head. I made one more application to these hypertrophies, and when I saw her again she was entirely free from pain. A few weeks ago she reported that there had been no return of the trouble, except very slight pain at two different occasions while at North Mountain.

During the past summer I have seen three similar cases. They all had some refraction error, correction of which failed to relieve the headache. Application of the cautery to anterior hypertrophies of the middle turbinated bones gave immediate relief, which has continued thus far. One of these patients reported, a short time ago, that his head had not felt so comfortable since he could remember anything, though he had been variously treated for several years.

Having found that reduction of these hypertrophies relieved pain in the head, the question naturally arose, why do they cause headache? A glance at the nerve supply of the nose and head reveals all the parts of a true reflex arc, and leads to the conclusion that these are purely reflex headaches.

The ophthalmic or first division of the fifth cranial, is a

sensory nerve, and is also supplied with filaments from the cavernous plexus of the sympathetic. It arises from the gasserian ganglion. Its branches are lachrymal, frontal and nasal.

Through the cutaneous branches of the supra-orbital branch of the frontal, the integument of the cranium is supplied with sensory nerves as far back as the occiput. The interior of the cranium is abundantly supplied with sympathetic nerves which always follow the blood-vessels. It is well known that the brain and its membranes are more liberally supplied with blood-vessels than any other parts of the body, hence, if they had not been demonstrated in this locality by anatomists, it would be fair to assume that there is also a liberal supply of sympathetic nerves. The nasal mucous membrane gets its entire sensory supply from the ophthalmic nerve and its branches, and the distribution is most abundant over the upper and anterior portions of the septum and the superior and middle turbinated bones.

It will be seen that thus we have all the conditions for the production of a reflex pain in hypertrophy of the anterior portion of the middle turbinated bone. Pressure by this on that portion of the septum which is most sensitive, involves a large number of sensory filaments. The sensation passes to the Gasserian Ganglion, and from this may be reflected to the entire scalp, or through the sympathetic may produce changes in the circulation within the cranium and thus produce a reflex headache. Dr. Day, in his Handbook on Headaches, published in 1880, says: "In no class of diseases do we observe better examples of *sympathetic pain* than in headaches. Pain originating in one part may be transferred to another and a weaker part, or to one ready to take on the morbid impression of pain. This communication is regulated to a great extent by the irritability or nervous susceptibility of the patient. The mere idea of pain is enough to bring on actual pain in some persons; and the mind can so vivify or exaggerate it as to give it a reality through sensation."

This, I think, will explain why *all* hypertrophies of the anterior portions of the middle turbinated bones do not produce

headache. The fact that they do not renders the diagnosis difficult. Up to the present time I have been unable to make a diagnosis of the cause of the headaches except by the therapeutic test. In the cases that I have observed there have been no symptoms to call attention to the nose. There has been no hypertrophy of the inferior turbinated bones, and consequently no obstruction to respiration.

The acute variety of this form of headache is probably not uncommon. It may be one of the factors in the so-called congestive headaches of acute coryza, and in the intense general pains in the head in La Grippe. I believe the chronic form without nasal obstruction is rare. More cases may be found when they are searched for, and many may have been observed, but not deemed of sufficient importance to be reported. As I have said, they are not described in any text book to which I have had access, or in any shorter article. Reflex catarrhal headaches, in which catarrh is a prominent symptom, are mentioned by some writers, and fully described by Dr. Allen, and in his paper he lays special stress upon the compression of the anterior end of the middle turbinated bone.

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## THE MEDICINES WE USE AND THOSE WE OUGHT TO USE.

BY MARIS GIBSON, M. D., WILKES-BARRE, PA.

READ NOVEMBER 18, 1896.

A physician should be ethical in all his practice; in the medicines he gives as well as the etiquette he observes toward his patients and his fellows. His close and careful diagnosis should be supplemented with just as close and careful therapeutics. All treatment, all therapeutics is not giving doses of medicine. In this society a few months ago, during a discussion on the subject of pneumonia, one said he believed in *no* treatment, but he went on and described the most complete and best treatment possible. It is fair to expect that a carefully trained

scientific physician, living in the vestibule of the twentieth century, will be willing to use anything, from whatever source, that will cure his patients, whether he obtained it from the secular newspapers, the folk lore of the villages, the country grandmothers, or even from homeopathy. We would not expect that he would spend much time in looking for them in these places.

A man is doing the best thing for himself and his patients, when he gives them the result of his careful studies, and the remedies that he fully understands, whether gathered from the accumulations of empiricism or the results of physiologic therapeutics. For, unless he does this, how can he know whether he is doing right or wrong? How, if he does not know what he is giving, can he know whether the condition of the patient is due to the disease or the medicine? And this is what the medical profession has sought for in past times and in the present age—to extend and widen the knowledge of remedies and the drugs used in the treatment of disease. For this and to crystallize and preserve the best things, pharmacopeias have been made, and dispensatories to explain the pharmacopeias, so that there would be uniformity of knowledge and practice. But in these ready-made days how many of us know much about the pharmacopeia, or how much of our prescribing is based on the preparations of that valuable book? Or what do we know of that other valuable book, the National Formulary? I am of the opinion that if physicians uniformly used the preparations named in those books, it would be better for us, for our patients, and for our friends, the pharmacists. If we assume that the preparations of the pharmacopeia are not the best or most useful, I answer, it is our business to use our best endeavors to modify them and make them the best and then use them, not of necessity, always; a physician should not be a man bound by hard and fast rules; he ought to be a genius, an inventor, a discoverer. You remember the paper on "Specific Medication" of our old friend, Dr. Mayer, where he gathered together the results of his practice with small doses of a number of remedies. This paper has been of value to many of us, I doubt not, on many occasions. I do not consider, however,

that a physician is under any possible obligation to try or experiment with the fabrications of chemists, who profess to have found a mare's nest, by the combination of some old common substances.

Referring to the subject of this paper, the medicines we use, I cannot say that I know what we use, or only to a very limited extent. I know, however, what we are importuned to use by the gentlemanly agents who bring us samples, and by the numerous advertisements in our journals. In just one issue of three weekly journals, the *News*, *Record* and *Journal of the American Medical Association* with the *Archives of Pediatrics*, forty-seven preparations are advertised and presented to our notice, by various catching representations. In these same journals the advertisements of strictly legitimate preparations could be counted on the fingers of one hand. The names of the forty-seven referred to may be of interest; they are, caroid, listerine, vin mariana, phytoline, pineoline, Tarrant's seltzer aperient, wine of cod liver oil, syrup of figs, milk of magnesia, Gude's pepto-mangan, antikamnia, carnogen, paskola, palpebrine (which is said to be the same as aqua conradi, but we might fairly ask, what in—is that?), neurosine, sennine, sanmetta, liquid peptonoids, Fellows' syrup, pavara pills, Freligh's tonic, noitol, rheumagon, melachol, sanitas, nosophen, antinosin, eudoxine, Hayden's viburnum compound, markasol, bismuth-boro-phenate, dioviburnia, protonuclein, peptenzyme, chionia, Peacock's bromides, seng, cactina pillets, laxol, bromidia, iodia, papine, glyco-thymoline, ferratin, lactophenine, celerina. I object to the most of these, that they are secret preparations, and we have no right to use them; to the others, that they are no better than any physician can formulate, and cost more than prescriptions would; another class represented by such as succus alterans, beef, wine and iron, elix. gentian and tinct. ferri chlor may be less objectionable, but, it only exemplifies the old couplet about the beauty of vice on closer acquaintance.

Another class I object to is the ready-made pills, in which nearly everything under the sun is put up in pill form. The necessary use of pills is small at best, and no one could expect

to have any certain result from a quantity of pills that had stood on the druggist's shelf for years; no pill is fit to use that is not made for the special prescription at the time it is needed and if it stands till it is thoroughly dry and hard it is a question whether it is soluble in the fluids of the alimentary canal. I have seen some that would almost require a sledge hammer to crush them.

In this connection I desire to pay my respects to the tablets and tablet triturates. It was an evil day when these things were brought forward and the sooner they are gone the better for scientific medicine. They are unscientific and unreasonable, and the use of them is only playing with medicine. There are no tablets, that I have ever found, of any value at all except those made for hypodermic use. Of the preparations of the coal-tar series, that were brought out a few years ago as antipyretics, probably the profession and the people would be better off if they had never been known. It is well that their use in fevers has almost entirely given way to the Brand treatment or some modification of it.

In regard to the Woodbridge treatment I am satisfied that the claims of the originator are thoroughly irrational and extravagant, that the only drug used that is of any value in that relation is the guiacol carbonate, and the only point of interest is the high price at which it is sold; and of the antitoxin which is now on the crest of the wave, I hope it will not have to go the way that tuberculin and hydrogen sulphide went.

I have not named nearly all of these matters; I have only designed to mention classes, or a few of each class, for their name is legion, and each passing day brings new ones that are brought out, not as the result of earnest, scientific study of physicians, but from the laboratories of chemists and pharmacists in their struggle after the almighty dollar. Now, I do not undertake to say that these are the medicines we use. I know, we, some of us, use some of them. I use some of them myself, but the number is small and becoming less, and we will be better physicians when we cease learning our materia medica from the men who bring us samples and from their circulars, and also from the callow productions of many of the

medical journals. This ready-made pharmacy makes us lazy, so that we are in danger of making scientific therapeutics one of the lost arts. It makes us careless when we depend on a tablet, that is designed for nearly all diseases, in one, or pills for headache, or a potion for the liver, and a powder for the kidneys, etc., without going to the trouble to investigate the cause of the ailment, or striving to reach the root of the trouble. Not all the practice of medicine is the writing of prescriptions or giving medicine; we should study the surroundings of our patients, their disposition, their position in life, the age, the hygenic condition, the dietetics, and all other conditions. Sometimes we give too much medicine. It is well for the patient when he gets only the exact number of doses to reach the disease, and it will be well when the long suffering stomachs of the people get a rest from dosing. Giving medicine by way of the stomach is much too slow and uncertain, when a patient needs quick and certain results; you would never depend on a dose of ergot by the mouth in a case of post-partum hemorrhage; we do not use our hypodermic syringes enough. We do not prescribe suppositories often enough, or enemas.

To be a competent therapeutist, one should study well his pharmacopeia, his dispensatory and his national formulary, Hare's therapeutics, that of Wood, that of Murrell, just published, that of Bartholow, and not once only, but often as he has opportunity, until he has a thorough understanding of the standard drugs we use, and can prescribe them intelligently. He will then have no need of the semi-proprietary medicines that have the dose on the label, for he can make his own doses. He will be working along the lines of rational scientific therapeutics. He will have a better opinion of himself, his doses will do more good, and he will save money to those who employ him.

# CHOREA.

BY J. ANSON SINGER, FORTY FORT, PA.
READ DECEMBER 2, 1896.

Chorea, or St. Vitus's dance, has long been known, and the literature of the subject, especially among the older writers, is as extensive as that of any other disease; but the accumulated observations of the members of our society, who are investigators into nature's abnormal workings, make it necessary that some of us should write on subjects that are not new to us; consequently I have taken this disease for my essay tonight. As well known, therefore, as the disease is clinically, there are still many points which are very obscure, and while we may find several cases exactly alike, we may also find a very obscure one, one in which we may find great difficulty in differentiating between it and hysteria.

Chorea is a disease of the voluntary motor track in the brain, and particularly of the cerebral portion; the spinal cord is involved only secondarily; it is a brain disease in the full sense of the word. We have hyperæmia of the brain, which may be very intense and accompanied with small hemorrhages. As the disease is found in ordinary practice it is seen in children from one to two years of age, up to puberty; it is quite infrequent after puberty, and seldom is a case found that cannot be traced to heredity or alcoholism. The disease is not nearly so serious in children as when it occurs after puberty. In about fifty per cent. of the cases we see, we have rheumatism either present or past, and we are often compelled to ask ourselves whether or not the disease may not have been the result of the rheumatism; but certainly the two conditions are often associated.

There have been quite a few epidemics of this disease on a small scale in this country. Dr. Weir Mitchell reports an outbreak which occurred in a children's asylum in Philadelphia, and quite a few others report similar outbreaks; but it appears that the epidemics were quite different from what we now call chorea, and the individuals suffering were more of a hysterical nature. Sex exerts considerable influence on the disease, and

about two-thirds of the cases met with are females. The connection between pregnancy and chorea is of great interest. The affection usually appears in the first half of pregnancy; it may cease before gestation, or continue to the end and persist even after delivery.

It does not necessarily occur in patients who have had the disease in childhood, but it does appear that an attack in one pregnancy would tend to its recurrence in another. The immediate cause for the disease in pregnancy is most often fright or rheumatism. As the disease occurs in children, the mental condition commonly shows some change; the child is irritable and peevish, cries and laughs readily, or is sullen and morose, or if at school may sometimes be punished for not keeping still, or for dropping slate or books. As soon as the patient is aware of the movements an attempt is made to control them, but erelong the twitching and jerking are constant, and most of the voluntary muscles of the body are affected. The extent of the movements varies in different cases; sometimes in real bad cases there are involuntary utterances made at frequent intervals. In such cases the mental condition commonly shows some change; the child is not able to study as before, and if compelled to study the memory may be impaired, so that no benefit is derived. Chorea may be confined to a single muscle or group of muscles. When limited in this way it is generally in the head, face, or perhaps in the shoulder. These cases have been named "habit chorea," and are sometimes very obstinate in resisting treatment, and may continue during life. Quite frequently we have paralysis to a greater or less extent, usually involving the upper extremity, and the muscles affected are the ones in which the movements have been most violent. There is always a complete recovery from the paralysis as soon the chorea subsides.

The disease usually terminates in complete recovery, death being a rare termination, except in pregnancy, and then usually from some complication.

As regards the treatment for this disease, a vast number of remedies are recommended, or rather have been tried. The most reliable, however, is arsenic. This, given in the form of

Fowler's solution, in large doses, is the best way of administering it. I usually give cod liver oil, and try to give rest to the affected parts. I believe rest to be one of the most essential parts of the treatment, and often the most difficult. I recall a case in which I put the left arm in a splint, the same as for a fracture of the forearm; kept it there for two weeks; gave arsenic, cimicifuga racemosa, and cod liver oil. At the end of two weeks I found the twitching had nearly subsided.

Iron is always of use in chorea, and especially so during convalescence. Change of air, wholesome food, rest (in bed, if necessary, in a bad case), not allowed to play or become excited, together with the above named treatment, usually effects a cure, unless it be hereditary or some of the localized choreas, and these may often be helped.

## DISCUSSION.

DR. T. A. JAMES.—There is no disease from which a physician can obtain more glory than from chorea, for the patient, as a rule, is unsightly to behold, and as in nearly all cases a permanent recovery is assured, the result is gratifying both to the physician and those relieved. As regards the true pathology of chorea we are as much in doubt as ever. It is a spasmodic neurosis distinguished from other spasmodic affections by frequent involuntary irregular movements of many groups of muscles. The muscles of the arms, legs and tongue being generally involved. Treatment for this disease should consist of absolute rest; in severe cases the patient should be kept in bed as much as poosible. Give Fowler's solution, commencing with M. V., and increasing it to M. XXV., t. i. d. if necessary. In my opinion many physicians fail because arsenic is not given in sufficient doses.

DR. G. T. MATLACK.—In regard to the etiology of acute chorea a rheumatic causation has predominated in nearly all the cases I have treated. In one case of maniacal chorea, which developed from a mild form, I could not get a rheumatic history. Associating my cases with a study of the current literature, I have come to the following conclusions: The postulated toxine being accepted as an essential element in the causation of rheumatism, and take depressing influences which determine the first position of the disorder, that is, what cells or tissues the toxine shall strike. In a large number of cases of rheumatism in which notes were kept and recorded with precision, it was shown that in nearly every case the part first receiving the force of the conditioning cause was the first to become affected by the toxine; for example, wetting of the feet first caused rheumatism in the lower extremities; of the shoulders, of the upper extremi-

ties. Now, if the depressing cause should be a fright, shock or mental excitement, the tissues to first feel it would be the nervous system; in the developing brain of a child the usual result would be chorea. In the adult it might be delirium, coma, hyperpyrexia, or chorea. In non-rheumatic persons, even young children, brain disturbance does not cause chorea. Arsenic and rest are usually the remedies I use.

DR. CHARLES P. KNAPP.—This is a very interesting disease—I refer to acute chorea. It seems to me that it is one of the diseases the germ theory is going to do much to solve. At first sight it seems a very improbable theory; but looking at the generally accepted morbid anatomy, namely, a functional brain disorder, affecting the nerve centers controlling the motor apparatus, an instability of the nerve cells—brought about by what? *A toxine certainly fills the symptoms and the successful treatment very well.* As, for instance, that frequent congener of the disease, rheumatism; its frequent occurrence after scarlet fever, measles, and influenza; the frequent occurrence of lesions in the heart and brain in chorea, as found after infectious diseases, and the success of treatment directed to neutralizing the toxine, and establishing a normal metabolism of the cells. Then, again, our chronic patients are those children and females in whom we generally find a weakened, hyperesthetic or unstable condition of the nervous system. Acute and often fatal toxemias—cholera infantum, tetanus, streptococcus and staphylococcus infections after operations, or in poisoned wounds, give kindred convulsive symptoms. At the same time it answers to the conditions, a lowering of the resisting power of the body, to attacks of the ever-present micro-organism, as in fright or sudden emotion.

In an excellent article by Dr. Henry Hatch, of Quincey, Ill. (read before the 47th annual meeting of the American Medical Association, at Atlanta, Georgia, 1896—Section, Diseases of Children), Dr. Hatch quotes Dr. Stephen Mackenzie's record as to ages, giving but one case as late as the 78th year. Two years ago I had a typical case of chorea, in a woman of 79, following an attack of influenza, which after a year proved fatal, from the exhaustion following on the constant and increasing movements.

In the administration of arsenic in this disease, Dr. Buck, of the Wilkes-Barre Hospital, called my attention to the fact, noticed by Dr. H. C. Wood, that improvement only begins when the weight of the patient begins to increase. In looking over my notes on these cases, I can fully endorse the statement, and it suggests to me the probable action of arsenic in bringing about normal tissue metabolism.

DR. G. W. GUTHRIE.—The fact that acute general chorea gets well under so many varieties of treatment leads one to conclude that such cases tend naturally to recovery—in other words, that it is a self-limited disease. The relationship of this disease to rheumatism has been brought

out in this discussion, and this recalls the experiments of Flint primus in determining the natural history of acute articular rheumatism. In a large number of consecutive cases of this disease in the wards of Bellevue Hospital he used simply a placebo of colored water and found that his cases recovered. He then placed another list of cases under the recognized alkaline treatment of the day, and found the duration and severity of the disease were lessened thereby. So I am led to believe that chorea is a self-limited disease, especially cases of acute general chorea, but that by judicious and appropriate treatment its course can be modified, its duration and severity lessened.

I recall a case of chorea I had under treatment several years ago, using cimicifuga and iron. During this treatment the patient was seized with acute inflammatory rheumatism. Abandoning the above treatment, I resorted to salicylate of sodium in large doses. The patient very promptly recovered from both the chorea and rheumatism.

Another patient had an attack of chorea, which yielded promptly to large doses of Fowler's solution. Within a year thereafter he was attacked with rheumatic endocarditis and died.

Local choreas are very hard to cure. I have seen two cases of laryngeal chorea in girls—so-called crowing girls. Both recovered. Of all remedies proposed for this disease, I have the most respect for arsenic.

Dr. E. A. Sweeney.—*Mr. President:* I wish to report a case that came under my notice while a resident at the hospital. Mr. P., age 25, had his leg crushed while working in the lumber camps of Michigan. The leg was amputated, but left a poor stump; there was no muscular covering. The stump troubled him for some time. About three months after the operation he began to have choreic movements, which increased until he was unable to perform any sort of work. He was sent to the hospital. The movements increased until it was necesary to put him in a strait-jacket. During this time I noticed that some of the other patients in the surrounding beds began to develop the same symptoms. Our patient was moved into a private room and the other patients also separated. They immediately got well without treatment. The medication was Fowler's solution, iron and cod liver oil. The dose of Fowler's was started at four drops three times a day, and slowly increased until he was taking thirty drops three times a day. The progress was slow, and Dr. Murphy suggested spraying his back with ether. He was taking twenty-five drops at that time without any improvement, but as soon as we started to spray the back the patient improved. He made a complete recovery. I met him about six months ago, and he had not had an attack since, which is about four years.

Dr. Hakes.—While the paper just read is not a very elaborate handling of the subject of chorea, still, as we meet it in practice and for curative purposes, it is a common enough ailment, and in the great majority

of cases is scarcely worthy to be designated a disease. One accepted fact is always to be remembered, viz., it has nothing in common with inflammation, and it is unattended with fever. To what extent the brain and chord are affected in the ailment it is difficult to determine, as post mortems cannot be had unless death occurs, and in those cases where death does occur the probability is that there has been something more the matter than what is ordinarily embraced in the term chorea. It belongs to the class of nervous disorders, as hysteria, epilepsy, etc., and when attended with difficulty in deglutition, embarrassment of speech, and a sort of cackling voice, simulates the symptoms of rabies, and might be easily confounded therewith, especially if we could somehow get a dog in the case. We will do well to bear in mind the kind of children and the general appearance of those who are, as well as those who were not, the subject of the ailment. Robust, healthy boys and girls are not liable to be subjects of chorea; it is those apparently ill-fed, ill-kept children, who lack tone and vigor, and appear as if they were very loosely put together. If, perchance, the subject is a boy or girl with apparently enough fat and flesh to cover their bones fairly well, yet the tongue will be found large, flabby, the eye dropsical, the lips pale, and all the motions loose and shuffling. Even in he absence of choreic jerking or grimaces, the indications for treatment are tonics, pure air, clean surroundings, and plenty of well-cooked nourishment. When there are involuntary motions, particularly of the legs as well as the arms, we should insist upon rest. As to medication, the first and best and most reliable is arsenic, in the form of Fowler's solution. This drug is about as certain a specific, in chorea, as is any drug for any other disease. The salts of iron have long been of repute in this disease, and while they are always indicated, in the conditions favorable for choreic symptoms, still they are not so entirely reliable and efficient as the arsenic. There is, however, another and not very rare manifestation of this disease, sometimes called epidemic, though improperly so. It is where numbers of children are associated, as in school or public institution, and the symptoms are acquired by imitation. Sometimes a whole school will, in this manner, become affected. We are not to infer, however, because of such a geneneral outbreak that the children are all sick or diseased, and in need of the arsenic. The child or children who initiates a general rumpus may need medical treatment, but the children should be separated and dispersed for a season. Just how or why arsenic is so potent in this disease I do not pretend to know, nor have I ever been able to find any man who could tell me. It may be suggested that it is for the same reason that it kills rats. Therefore, the disease is of microbean origin, and the arsenic will kill rats, and also microbes, which make the patient kick, jerk, twist and jump. This is the new philosophy, but, as before said, the dog only was lacking, so now everything is in place and on hand, except the miserable microbes.

# THE TREATMENT OF INEVITABLE ABORTION.

BY DR J. T. HOWELL, WILKES-BARRE, PA.

READ DECEMBER 16, 1896.

Abortion is the termination of pregnancy by the expulsion of the ovum before the completion of the third month.

I shall, in this brief paper, treat the subject as practically as possible, and shall divide it into four heads.

*First.* The cases of abortion in which there is hemorrhage, without the expulsion of the fœtus or placenta.

*Second.* The cases in which the fœtus is expelled and the placenta retained.

*Third.* The cases in which the fœtus is expelled and parts of the placenta retained.

*Fourth.* The cases in which fœtus and placenta are removed at one and the same time.

There is no disease, if this can be classed as such, which gives us more anxiety than a case of abortion; especially after one has seen all the evil consequences that may follow. We are seldom called to attend a case of abortion in which we can arrest its progress. Where a patient is under our observation, and has repeatedly miscarried at a certain time of her gestation, we can to a certain extent prevent it, by keeping the patient in a recumbent position, from four to six weeks, during the dangerous period.

I can recall two such cases in which the families were very anxious for children. The one had miscarried four times at the sixth month, and the other twice at the fifth month; but by taking proper precautions both were delivered of full term babies.

In cases where there is hemorrhage without the expulsion of either fœtus or placenta, and as the detachment and expulsion of the ovum cannot possibly take place without rupture of the decidual or placental vessels, hemorrhage becomes an important factor. When called to attend such a case, our first duty is to tampon. Although it may be a question of vital importance, it will save the mother, but condemn the fœtus; it will

arrest hemorrhage, and it will put the whole process of abortion through its various stages to completion, as a rule, promptly and speedily, and in the course of twelve or twenty-four hours you will find the fœtus and secundines partially or wholly expelled into the vagina. A tampon at this time is not only a blessing to the mother, but it relieves the physician from needless anxiety, especially when called during the night to attend cases of abortion with alarming hemorrhage. You can tampon and leave your patient with perfect confidence, knowing you will find her safe on your subsequent visit.

We are often called to cases of abortion in which we find the fœtus expelled, but the placenta retained; at times with little hemorrhage, but often we find the patient almost exsanguine. Our first duty is to remove the placenta, if possible; if not, then tampon. If the os is dilated and the uterus pressed low down into the pelvic cavitity, the hand in the vagina and the fingers in the uterus, the placenta can be removed without much difficulty.

To illustrate. I was called to see Mrs. C. at midnight in September, 1896. She had expelled the fœtus about two hours before my arrival. I found that my patient had lost an enormous quantity of blood; she was pulseless, and begged me to first give her something so that she could breathe. I immediately gave her a hypodermic injection of $\frac{1}{32}$ gr. of strychnia, and after disinfecting my hands with sublimate, introduced the right hand into the vagina, and pressing down the uterus with the left, the placenta was easily expelled; but the patient was still in a bad condition. I gave her a hypodermic injection of nitro-glycerine, and to take by mouth tinct. digital., aromat. sprts. of ammonia and nitro-glycerine. In the course of twelve hours she had fairly reacted, and made a good recovery.

But we are not always so fortunate in removing the placental mass as a whole at one and the same time. In a certain proportion of cases it is adherent, and is retained in utero. These are the cases which give us the greatest anxiety, and bring the subject under its third classification.

There are some cases in the earlier months of abortion, to which we are called, in which the ovum has been expelled,

and on examining the patient we feel a mass filling up the os uteri. There may be pain and some hemorrhage. The question arises: which is the better method to pursue, wait and tampon, or try and remove the contents of the uterus. If your patient can be seen readily I believe it is the better practice to wait and tampon. You may have to wait a few days, but in the end the contents of the uterus will be expelled entire, which can then be readily removed, and your patient will make a good recovery, without any further complication. Should your patient live at some distance, then I should say, remove the contents of the uterus at once. This can readily be done by having your patient thoroughly under the influence of an anæsthetic; it relaxes the os and cervix, relieves the woman from all pain, and you have perfect control of the situation. By rendering your hands perfectly aseptic, and using your finger as a curette, which, by the way, is the best curette, you can remove the entire contents of the uterus.

I can recall a case to which I was called at some distance during the present summer, not knowing the nature of the illness. On my arrival I found a case of abortion, but fortunately I carried my satchel containing chloroform and antiseptic tablets. After rendering my hands aseptic, I found, on examination, an adherent placenta, which was easily removed, by the above method, much to the satisfaction of the friends and patient, the patient having had a similar experience a year before. The attending physician had great difficulty in removing the placenta, at the same time causing her a great deal of suffering.

In some cases of abortion the hemorrhage is severe before the os is at all dilated, and we have no alternative but to tampon. In these cases, in order that the tampon may be applied effectually, we should use a bivalve or Sim's speculum, and with tampons made from sterilized absorbent cotton about the size of a walnut, pack around the cervix until the vaginal vault is nearly filled. It is not desirable to allow a tampon to remain more than twelve hours before being replaced by a fresh one, as they soon acquire a very offensive odor. Also, in cases of severe hemorrhage it is not well to tampon more than twenty-

four or thirty-six hours. Its continued use irritates the vagina, generates septic material, and produces decomposition of the placental mass, which may be serious or mild in its results, but there is a rise of temperature and acceleration of the pulse. The absorption of septic material soon becomes the source of chills and fever, and great uterine tenderness. It is then necessary to resort to more active measures to rid the uterus of its contents, by dilating the os and the use of the curette.

I can recall cases of abortion, and I guess we all can, in which our patient has had a violent chill, with a rapid bounding pulse, and very high temperature. It is then we become anxious, knowing full well that septic material is being absorbed, which must be gotten rid of at the earliest possible moment, and it can be safely said that in no other way can we be assured that the uterus is entirely emptied than by the use of the curette; and this must be done by observing thorough and rigid antisepsis.

When the os is patulous it is not always necessary to give our patient an anæsthetic. I have repeatedly performed the operation without it; but when the os is contracted, and you are obliged to dilate with a steel dilator, it is essential to give an anæsthetic, so as to perform your work thoroughly, and relieve your patient from pain.

I have been in the habit, when it was necessary to perform this operation, to have my instruments boiled for at least half an hour at my office, wrapping them in a sterilized towel, having left directions at the patient's house to have plenty of warm and cold boiled water.

If necessary anæsthetize your patient. She is then to be placed on a table in the lithotomy position, and the legs held by a Robb's leg holder. Your hands being thoroughly sterilized, the vulva and vagina should be well washed with soap and sterilized water. Your instruments being immersed in sterilized water, the perineum is retracted with a Sim's speculum, the anterior lip of the cervix is grasped with a vulsellum forceps, upon which slight traction is made to steady the uterus. If you cannot pass the curette through the cervical canal, it should be dilated with the steel dilators. The curette

is then introduced into the cavity of the uterus, and it is carefully and systematically gone over until all of the débris has been removed, and when completed the uterus is irrigated with sterilized water, and packed with iodoform gauze, which is allowed to remain for at least forty-eight hours, as it produces good drainage. If all these precautions are taken in curettment, you will find that your patient will have no more chills or fever and will convalesce rapidly.

I do not endorse the use of the placental forceps, and think it is an instrument of the devil. I mentioned, in the beginning of my paper, that I had seen all the evil consequences of abortion, and this was through the use of the placental forceps. My patient did not die, but she developed sepsis, and was sick a long time, having chills and fever, carrying a temperature of 104°, 105° and 106° for days, and it was only due to her profuse perspiration that her life was saved. I remember giving that patient, both by mouth and rectum, one hundred and twenty grains of quinia in twenty-four hours, and I am happy to state that she is a happy mother to-day, and I had the pleasure of delivering her of two healthy boys since that memorable time.

There is no class of cases of abortion which we are called to attend that are more gratifying to the physician, and promise better and speedier convalescence to the patient, than the cases in which the whole contents of the uterus are expelled at one and the same time.

There is one complication, the result of abortion, which gives us a great deal of annoyance, that is mænorrhagia, no doubt caused by vegetations in the uterine cavity at the point of the placental attachment, and I have often thought it would be well to curette every case of abortion in which we know that it was impossible to remove every vestige of the placenta at the point where it was adherent to the uterine wall. To illustrate: In November, 1894, I attended a patient for abortion, and it was impossible to remove all of the placenta without resorting to the use of the curette. In July, 1895, I attended the same patient for the same trouble, and the same complication presented itself; but the patient would not consent to the use of

the curette, and for the next eight months this patient was subjected to constant uterine hemorrhage. The constant hemorrhage from this cause renders the uterus soft, and it is an easy matter to puncture it while curetting. Such was my misfortune in this case. But owing to everything being strictly antiseptic I did not have any bad results, the patient making a good recovery without a rise of temperature, and only slight pain on the side of the puncture.

## DISCUSSION.

DR. W. H. FAULDS.—Dr. Howell has given us an excellent paper on a very important and practical subject. I have no criticism to make, except in the use of the tampon after the placenta has been detached and forced into the cervix. When this has occurred we have no further use for the tampon, and if continued for several days the danger from sepsis is increased. As soon as the uterine contractions have ceased, and the placenta has been partially or wholly detached from the uterine wall, the abortion should be completed either by the use of the finger or curette.

In irrigating the uterus I prefer the Mattison to the fountain syringe, and for the reason that from the latter we do not get force enough to project the stream strongly against the uterus wall and thus thoroughly cleanse the uterine cavity. By using the Mattison syringe we get the necessary force, and the danger from the introduction of air may be obviated by removing the stem and immersing the bulb in a pitcher of water and holding it there until the irrigation has been completed.

The danger in abortion, as pointed out by the essayist, is from hemorrhage and sepsis. The former may be best controlled by the tampon, and the latter by emptying the uterus as soon as the placenta has been cut off from the uterine circulation, and before the process of decomposition has commenced. Up to a very recent date, we have been led to regard almost every case of sepsis following abortion or labor as due to a want of cleanliness on the part of the attending physician; but we now know that there are other causes of sepsis over which the physician may have no control, such as pus tubes, gonorrheal endometritis, the presence of saphrophytes, staphylococci and streptococci in the vagina, uterus, or fallopian tubes before the abortion has taken place, there waiting for a favorable soil in which to propagate and become virulent. This opportunity being furnished by decomposing blood clots and placental dèbris, we have all the conditions necessary to the production of fatal sepsis. So that, while before the use of antiseptics to cleanse the instruments and hands, a large majority of the cases of sepsis may have been due to unclean instruments and dirty hands, we have now good reason

for believing that nearly all the cases of sepsis that occur after abortion, when asepsis has been practiced, are due to one or more of the other causes mentioned.

A very instructive lecture on this topic by Dr. Barton Cook Hirst may be found in the October number of the *University Medical Magazine.*

DR. ROE.—There is one question connected with this subject not yet mentioned. What is the best method of dilatation in cases where we find the uterus partially dilated, so that we can introduce a finger, find a mass presenting, and decide that abortion is inevitable? A friend of mine, Dr. P. A. Harris, has described a method of dilatation by means of the fingers. With the patient anæsthetized, we first introduce one finger, then two, three, and even four. We can thus thoroughly dilate in from ten to twenty minutes. I have used this method several times with gratifying success. I recently used the same method in a case of labor at full term, with rigid os. I used an anæsthetic and in fifteen minutes had fully dilated the os. The anæsthesia was then removed and the labor soon terminated naturally.

DR. ROGERS.—There is one point in treatment of this disorder which has not been brought out in the discussion; I refer to elevation of the hips, in connection with perfect rest. To illustrate the importance of attempting to save the fœtus I will relate the following case: Mrs. R. J., about five or six months pregnant, had a hemorrhage sufficient to soak through a straw bed tick to the floor and run eight or ten feet to the base board, where it collected. Upon examination I decided to make an attempt to save the fœtus. The foot of the bed was raised about eight inches, no pillow allowed for the head, and perfect quiet enjoined for forty-eight hours. This, with viburnum fluid extract, succeeded in controlling the hemorrhage, and the woman was delivered at full term without further trouble.

At a meeting of the Luzerne County Medical Society, held October 21, 1896, Dr. Harvey presented a portrait of Dr. John Smith, one of the early members of the society. Dr. Harvey was requested to prepare a biographical sketch of Dr. Smith, to be read at the next regular meeting.

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## JOHN SMITH, M. D.

BY DR. OLIN F. HARVEY, WILKES-BARRE, PA.

READ NOVEMBER 4, 1896.

Dr. John Smith, of Wilkes-Barre, whose portrait was presented to this society at its last meeting, was one of the early members of the society, being elected at its second meeting, April 17, 1861. He was then the oldest physician—both in years and practice—in this community, having survived all his professional contemporaries of early days, and eight years later he died.

He was a native of Kingston, Luzerne county, where he was born November 4, 1789, the son of Captain Benjamin and Welthea Ann (York) Smith. Captain Benjamin was the son of Captain Timothy, who was the son of John. The last named was an original proprietor in the Susquehanna purchase, and was a justice of the peace here in Wyoming in 1772, but whence he came I know not.

Fate tried to conceal him by naming him Smith, and his parents, by prefixing "John" to his cognomen, effectually concealed from his descendants of this generation all genealogical information that, except for this, might, perhaps, be learned. In the early days of this country the proportion of "John Smiths" to the whole population was about the same as now. Hence it is impossible to tell, at present, whence came John, the great-grandfather of Doctor John.

Through his mother Dr. John Smith was descended from Lieutenant Thomas Miner, and also from James York, both natives of England, but early settlers in Stonington, Conn.

Charles Miner says in his "History of Wyoming," that Captain Timothy Smith, the paternal grandfather of Doctor John, "was a leading man in the Susquehanna Company, at their meetings in Hartford, before settlement was made in Wyoming. Choosing Kingston for his residence, his name is recorded as one of the '40,' or earliest settlers. The old Westmoreland records frequently contain his name, and it is evident that he was an active, thorough business man, commanding confidence and respect. * * * His son (Captain Benjamin), was a man of singular benevolence, and an admirable nurse of the sick. When, in 1815, the typhus fever prevailed throughout the country, he threw himself in the midst of it, took the disease and died." The "typhus" fever mentioned was denominated by Dr. Edward Covell, of Wilkes-Barre, in 1819, as *pulmonic* fever, and was described as having been "epidemic over the country generally" in the winter of 1815–16. There were eleven deaths due to it in this town—the population of which, at that time, was only seven hundred.

Captain Benjamin Smith was also *Doctor* Benjamin, for he was not only "an admirable nurse of the sick," as Charles Miner has recorded, but was a practicing physician for a number of years in Kingston. He died there January 19, 1816, aged 57 years.

In August, 1815, Dr. John Smith began the practice of medicine in New Troy (now the borough of Wyoming), Kingston township. Where, or under whose direction and instruction he had pursued his preparatory studies, I have been unable to ascertain. For twenty-one years thereafter he made New Troy his home, although his practice was not, by any means, confined to that locality. In 1836 he removed to Wilkes-Barre, and leased his home in New Troy to Dr. George Wurts, who succeeded to a share of his practice on the west side of the river.

Dr. William Pepper has lately estimated, from existing statistics, that, taking the length and breadth of the country, one thoroughly qualified medical man can minister efficiently to, and, in turn, be fairly supported by a population of from fifteen hundred to twenty-five hundred persons. In the United States, however, there was, last year, one physician for every six hundred and twenty-six of population.

When Doctor Smith located in Wilkes-Barre the population of the borough was only fifteen hundred, and there were already in practice here at least three active, intelligent, up-to-date physicians—E. L. Boyd, Thomas W. Miner, and Lathan Jones. There may have been others, there certainly were others residing in Plymouth, Hanover and Kingston, who shared, with the Wilkes-Barre doctors, the practice throughout the valley.

The doctor of those days, who attended strictly to his professional duties, was a hard-worked man, and earned all the remuneration he received, whether it was money, country produce, or mere thanks. His fees were small; and very often it was the case that when they had accumulated to a considerable amount, the debtor settled by giving his note, which he never paid. The average doctor does an immense amount of work for nothing, and a good deal more in the interest of science, which is only indirectly to his advantage. He works harder, gets rich more slowly, and dies before he ought to, oftener than any other sort of professional worker.

Dr. Smith worked diligently in his profession, and for years —even up to within a few years of his death—his field of practice extended from Pittston to Nanticoke. From the outset he had his share of the general practice in the valley, and, owing to his kindheartedness and easy-going ways, had *more* than his share of non-paying patients. He was always particularly kind and attentive to those whom he knew to be poor and in straitened circumstances, and during the civil war it was his rule to make no charge for professional services which he rendered to the families of men who were enlisted and serving in the union army, unless they were well able to pay for the services.

In August, 1819, Doctor Smith was appointed, by Governor Findlay, a justice of the peace in and for Kingston township, and for several years he performed the duties of the office. During the years of his middle-age he devoted considerable attention to politics. In 1828 the anti-masonic political party sprung into existence. It flourished in Pennsylvania until 1838, and during that period many of the prominent citizens

of Luzerne county allied themselves with the party, and became active workers and leaders in it, among them being Chester Butler, Oristus Collins, Col. H. B. Wright, Sharp D. Lewis, Dr. T. W. Miner, and Dr. John Smith. The party was at its zenith in this state in 1835, when Joseph Ritner, their candidate, was elected governor. He was inaugurated in January, 1836, and the same month he appointed Dr. Smith prothonotary of the Courts of Common Pleas, clerk of the Courts of Quarter Sessions and Oyer and Terminer, and of the Orphans' Court of Luzerne county, to succeed Henry Pettebone. The *Wyoming Republican and Herald* of January 27, 1836, in referring to the appointment, said: "Doctor Smith, who is appointed prothonotary, etc., is certainly a most worthy and estimable citizen, whose claims and competency none can doubt. Indeed, no man in the country has stronger claims. The appointment is a good one, and, as far as we have heard an expression of opinion, is received as such." Dr. Smith held these offices until February, 1839, when he was succeeded by Jasper Fassett. Upon the adoption of the new constitution in 1838, the office of prothonotary became elective, and in October, 1840, Doctor Smith was a candidate for it in this county, but was defeated by Dr. Andrew Bedford, of Abington, father of George R. Bedford, Esq., of this city.

For several years Doctor Smith was a member of the borough council of Wilkes-Barre, and was president of it from May, 1850, to May, 1851. He was also, about the same period, a member, and for a time, president of the board of school directors of the borough.

Being exceedingly methodical and regular in his habits, he was able to devote a good deal of time to study and general reading, and during his residence in Wilkes-Barre quite a number of essays on various subjects were contributed by him to the local newspapers. During the last years of his life there was printed in *The Record of the Times*, of Wilkes-Barre, a series of articles written by him, which was denominated by the editor as "chapters of exceedingly interesting history."

Of the present members of this society there are very few who ever knew or saw Doctor Smith; but by the oldest mem-

bers, and by the parents of those of us who are natives of the Wyoming valley, and by the community at large a generation ago, he was well known and highly respected, both as a man and physician. From my early childhood until Doctor Smith gave up the practice of medicine, because of the infirmities of old age (which was only a short time before his death), he was frequently called upon to render professional services in my father's family. I early became acquainted with his doses of blue-mass, castor oil and quinine, and during my early childhood a sight of the old doctor, as he drove through the streets of this town in his queer looking gig, always recalled to my mind unpleasant recollections and experiences, and caused a blood-curdling shiver to run through me. As I grew older and saw more of the doctor, I discovered that behind his barricade of pill boxes and medicine vials, and beneath his rugged externals and unpolished manners, there existed a kindly, benevolent nature, and beat a generous heart. With this discovery came respect and regard for him, especially when I knew that he and my father were good friends; and when I learned that he knew well my grandfather, with whom he had had business, political and professional relations, and that, as a boy, he had known my great-grandfather, and had heard him repeat the story of his trials and tribulations whilst a prisoner in the hands of the Indians in Canada, in 1780–'81, which was only about nine years before the doctor's birth.

Doctor Smith always did his best to uphold the honor and the dignity of his calling, and was a strong advocate for higher medical education. Observation and experience taught him, early in his professional career, just what all of us have learned, viz: That there are no limits to the knowledge to be derived from the study and practice of medical science, and that the physician who expects to be useful and successful in his profession must be assiduous and earnest as student and practitioner. Appreciating the lack of preliminary school training in his own case, Doctor Smith always urged, upon those contemplating a professional career, not only the desirability, but the necessity, of the very best preliminary education that could be obtained.

Doctor Smith was married in 1814, to Mehitable Jenkins, of Kingston, a granddaughter of John Jenkins, Esq., an early settler in Wyoming, a justice of the peace for several years, a representative from Wyoming, or Westmoreland, to the Connecticut Assembly upon several occasions, and prominent in other ways in this locality for several years. John and Mehitable (Jenkins) Smith were the parents of five sons and five daughters, of whom only one son and one daughter are now living. There are numerous grandchildren and some great-grandchildren living in this city and elsewhere. Mehitable (Jenkins) Smith was born March 18, 1796, and died July 6, 1862.

Doctor Smith, having practiced his profession in Wilkes-Barre for nearly thirty-three years, died here August 24, 1869, in the eightieth year of his age, and his remains were interred in the old cemetery at Forty Fort. I would sum up his life and character in these words: He was sincerely and truly faithful, hopeful and charitable. His morals were correct, his private life was pure, and his services to the public were performed honestly and creditably.

# In Memoriam.

## JOSEPH A. MURPHY, M. D.

READ MAY 6, 1896.

*Mr. President and Gentlemen of the Luzerne County Medical Society:*

The committee to whom was assigned the duty of preparing a memorial of our departed brother, Dr. Joseph A. Murphy, respectfully beg to submit as follows:

Joseph A. Murphy was born in Chanceford, York county, Pennsylvania, February 17, 1842. He was the son of John A. and Nancy Clarkson Murphy. Spending his youthful career on his father's farm, he acquired as a farmer's son a physical constitution that served him well in the years of his mental pursuits and the herculean labors of his professional life. He received an excellent preparatory college education, and early chose the medical profession as the field whereon to pitch his tent and fight the battle of life. In the selection of a tutor he was most fortunate. He studied medicine under one of America's most accomplished surgeons and physicians, Doctor John Atlee, of Lancaster, Pennsylvania, and received his degree of "Doctor of Medicine" from the University of Pennsylvania in 1868. Doctor Murphy commenced his medical practice, after graduation, at Columbia, Pennsylvania, but soon sought a wider field for his usefulness, and came to Wilkes-Barre in the summer of 1869. He was a very modest and unpretentious man, and in his early years somewhat bashful, but he was a gentleman by intuition. Some faculties are

acquired, but the peculiar and grand ability and disposition of attracting stable and lasting friendships is not artifice, but an inheritance. This noble inheritance Dr. Murphy possessed in abundant fullness. Equipped with these superior qualities, the prophetic eye could as certain forecast the happy results as that the sun will shine at midday if there are no intervening clouds.

And so it was from the day the young Dr. Murphy nailed his professional shingle to the outer wall on South Main street to the day of his death. He enjoyed the unstinted respect, confidence, and love of not only his clientele, but of the whole body of the people. In his professional career, one success followed another until he became interested in everybody and everybody interested in him. He was no meteor in his profession, shining in dazzling light for a moment and then ending in darkness. His reputation was not acquired like a fortune by a single stroke, to be followed by possible bankruptcy and perhaps disgrace, but was a growth like the steady, ceaseless, certain accumulation of money at six per cent. interest. In May, 1872, Dr. Murphy was united in marriage with Miss Frances Parrish, and resided for some years on South Main street near South street. In 1885 he built himself a lovely residence on Franklin street, adjoining the Episcopal church. His practice covered a wide range of territory. His affable manner, his fine physique and commanding presence, conjoined to his superior professional knowledged and ability, put him *en rapport* with the great body of the people, whose friend he was and whom he delighted to serve. In addition to his very extensive private practice, Dr. Murphy devoted his full quota of time in attendance at the Wilkes-Barre Hospital, as one of the staff of surgeons and physicians, from its erection to the time of his death.

Doctor Murphy was a member of the American Medical Association, of the Pennsylvania State Medical Society, of the Lehigh Valley Medical Association, and was one of the oldest members of the Luzerne County Medical Society, in which he took a great interest and was one of its most prominent members. His professional practice, and the demands which pro-

fessional reading made upon him, left him but little time for the pursuits of general literature, general business, or recreation and amusement. However, from his practice and discreet investments, he was exceptionally fortunate in his accumulations. Though a liberal and charitable giver, especially to the poor and unfortunate, he left his family, to whom he was intensely devoted, an abundant competence.

His literary tastes were chaste, and whatever had a tendency to develop true manhood and promote general welfare and happiness, found in him an enthusiastic champion, an earnest advocate. Doctor Murphy entertained strong political opinions, but wisely refused to involve himself in politics. Yet with his wonderful popularity and wide acquaintance, it is safe to say, that had he chosen to offer himself for popular suffrage, he would have been a strong competitor, an invincible antagonist. During life, the long established ethics of the medical profession prohibits the trumpet's blare of professional fame and the leaded headline, the bill board, board fence and painted rock methods, so enormously common in trade and commerce. Not until the curtain of death is drawn is the profession permitted to summarize and declare its estimate of the professional qualifications of a brother taken from our ranks by the hand of death. When the physical career is closed and we are left to contemplate the immortal inheritance, the ideal and spiritual possession, which shall abide with us forever and cannot be taken from us, which shall continue forever to bless our race, then, and then only, may we freely testify to and proclaim the opinions that professional law and ethical modesty hold in reserve until the last great change from life to death. Now we may freely speak and record those virtues and graces that we have observed in our every day contact with our departed brother during his professional career. Probably the most accurate thing we can say of him is that he was a first-class all around doctor. Thoroughly grounded in all departments of his art, he made no pretensions to special branches—not that he ignored the advantages to be derived from exclusive labor and practice in particular lines; yet he preferred a general practice, and as a general practitioner he was a shining

light, and found ample opportunity to do the greatest amount of good of which one man is capable.

Whether in medicine or surgery, he was a safe, conservative, skillful and successful practitioner. He was a believer in well-established methods in all the branches of medical practice, and was chary in giving approval to the latest and astounding remedies, resting only upon popular favor and interested financial foundation. Intensely loyal to his profession, he was an excellent consultant among his peers, and to the younger members his advice was as scrupulous, comforting, considerate, gentle and kind as a father to his children. It were mere ostentatious affectation for his professional brothers to recount his many professional accomplishments, his many virtues, or expound upon the graceful bearing of so well known a man in all the walks of life. Doctor Murphy apparently commenced to decline in health about a year since, and he sank rapidly the last two months. There can be not much doubt that the constant mental strain of a quarter of a century which he endured was the main factor which, through the emotions and disturbed functions of animal life, developed the physical disturbance which rendered a cure impossible and death certain. He was not the first sacrifice in the profession, nor will he be the last. And if we may appreciate and appropriate the lesson fairly deducible from his untimely death, it is a solemn reminder that so active a professional life has its limit and its certain penalty.

The sublime height to which he reared his professional reputation, the substantial base whereon he builded his character and widely spreading fame are monuments of his own erection, and at his own expense. His ambitions were legitimate and laudable, his victory and final award satisfactory, consoling, precious, durable. In the best interests of humanity, we may not question if the sacrifice made for such ends is greater than the individual can afford.

Neither the eulogies spoken or written of Dr. Murphy, nor the tears shed for his loss, are mere gratuities. Every word, every sigh and every tear had been well earned and paid for in advance. Eulogies unearned and undeserved signify nothing. But when a good name and a fair fame is accorded by

the universal voice, mankind have crowned the departed with the highest honors which they can confer, and may well rest assured that the all-merciful judgment of God will ratify, sanctify and approve their conclusion. Doctor Murphy was not deceived as to his condition and danger by the kind and guarded encouragement of his medical friends, nor by the hopes and anxieties of his family and friends. He plainly foresaw his approaching end and by masterly mental effort reconciled himself to the inevitable, grandly commanding the courage and Christian fortitude to prepare for and meet death with perfect composure and peace, folding his arms and closing his eyes, without leaving an enemy in the world. Doctor Murphy died at high noon April 4th, 1896, leaving a widow and three affectionate daughters to mourn his loss.

Members of the learned professions pass judgment upon the merits of their brothers mainly from a professional standpoint and by recognized standards in their particular professions. Their verdict, therefore, to that extent, is entitled to the highest consideration, for it is the judgment of his peers. It is a most agreeable and pleasant duty for the members of the Luzerne County Medical Society to bear the final record to the high standard of excellence attained and maintained by Dr. Murphy in his relations to medical art and medical ethics. But as in all learned professions, so in medicine, there yet remains a greater tribunal, another inquest to be heard from, whose verdict is final and conclusive. We refer to the great jury, the whole body of people. Hence the maxim, *Vox populi, vox Dei.* He who secures the approval of this universal inquest enjoys all that can be desired, for it is all this world can give and is the crown immortal. From the public press, the great mouthpiece of the people, from every source and by every means whereby this glorious verdict of "well done good and faithful servant" may be announced, the testimony to our departed brother is sincere, truthful and of gratifying abundance.

The world is better that he lived. He contributed his full share to the happiness and well being of his fellow men. Glorious in his life, glorious in his death, his example will forever remain an incentive for imitation, giving us our best hope for an

eternal reward, making us strong in faith and courageous and fearless at last to go down to the dark waters dividing mortality from immortality, the transient life that is from the life eternal, from the house which is temporal to "an house not made with hands, eternal in the heavens."

HARRY HAKES, M. D.,
ALEXANDER G. FELL, M. D.,
W. G. WEAVER, M. D.,
*Committee.*

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## DR. GIDEON UNDERWOOD.

READ JULY 1, 1896.

"Dr. Underwood is dead." Within an hour after his demise, which event occurred at 10 A. M. on Thursday, January 30th, 1896, this sentence was upon the lips of nearly every man, woman and child in and about Pittston; and coupled with it, in almost every instance, might be heard the further remark, "a good man has passed away." It is not too much to say that throughout the community in which Dr. Underwood lived and died he was universally respected, and his death was, with equal unanimity, deeply regretted.

A brief sketch of his life will doubtless be of interest to the Luzerne County Medical Society, of which he was an honored member; and if unable, in this brief resume, to discover in the career of our departed brother an especially brilliant star of genius, we shall not fail to find in his character the elements of a noble manhood that command the respect and admiration of us all.

At the time of his decease Dr. Underwood was the oldest practicing physician in Luzerne county. He was born at Forty

Fort December 3d, 1819, a son of Gideon and Sarah (Brown) Underwood, natives of Massachusetts and Pennsylvania respectively, who were among the pioneers of Wyoming Valley. His boyhood was spent in agricultural pursuits, his early education being obtained in the public schools and at a private academy in Wilkes-Barre. In 1842 he registered as a student of medicine in the office of Dr. George Wurtz of Kingston. Later he entered the Geneva Medical College, Geneva, N. Y., leaving that institution in 1846. He located in Scranton and began the practice of medicine; but in 1848 he removed to Northmoreland, Wyoming county, Pa., and subsequently in the same year he established himself permanently in Pittston, Pa., where, with the exception of one year spent in army service as assistant surgeon of the 49th Pennsylvania Volunteers, he continued in the active practice of his profession until the time of his death. He was the last survivor of a family of ten children. Dr. Underwood married, February 3d, 1848, Martha Newman, of Bradford county, Pa., who survives him. Seven children were born to them: Caroline (Mrs. H. E. Coward), Helen M. (Mrs. J. A. Faulkner), Charles S., Dr. Sanford L., Edwin M., Walter S., and George E., of whom the three latter are deceased.

Dr. Underwood was one of the projectors of the First M. E. Church of Pittston, contributing the first five dollars in 1857 towards the procuring of a charter. He occupied at all times an official position in the church councils, and was unfaltering in his devotion to the principles of his religious faith. If any one of his virtues stand forth more prominently than another it was his unflinching, aggressive Christian work. In truth it may be said that "his daily walk and conversation" was such as to convince men of his deep sincerity in the promotion of every measure calculated to build up and strengthen the church militant. He was an active member of a number of benevolent organizations, among others the I. O. O. F., K. of P., L. of H., and G. A. R. In these and other societies he was a trusted counselor, and by them was called to fill various positions of trust and honor.

As a physician he was exceptionally courteous to his col-

leagues, thorough in the discharge of his professional duties, faithful to his patrons, and especially kind and considerate to the deserving poor. None will miss him more than this class, many of whom had come to look upon him as their unfailing friend. Upon the darkest night or the stormiest day he would respond with even greater alacrity to the sick call of the suffering and dying pauper than to the polite behest of his more prominent and affluent patron. We are not unmindful of the fact that posthumous eulogies, in too many instances, represent what the life of the departed should have been rather than what it really was. Yet in this instance we feel that the testimony we bear in recognition of Dr. Underwood's sterling qualities have been literally exemplified throughout our entire association with him.

He has entered upon his reward after a life ripe in years, full of good works, untarnished by the shadow of dishonor, and replete with the confidence of his fellow men. Of him it may truly be said: "I have fought a good fight, I have finished my course, I have kept the faith."

JOHN B. MAHON, M. D.,
CHARLES P. KNAPP, M. D.,
J. S. HILEMAN, M. D.,
*Committee.*

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